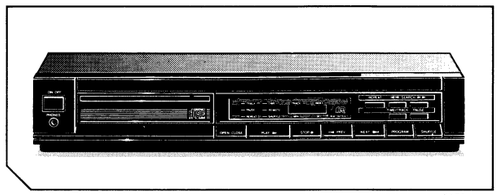
Compact disc player CD480/00R

CD482/00R

Service
Service
Service



43979A11

Service Manual

COMPACT disc DIGITAL AUDIO

CONTENTS

1 Contents and Control Buttons
1 Technical specifications
2 Servicing hints, loading and cabinet parts
3 Electrical measurements and adjustments
4 Blockdiagram, panel data and partslist of the main panel
5 Control and display, wiring diagram and electrical partslist

(GB)
Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

(NL)
Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde worden toegepast.

(D)
Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden für Reparaturen sind Original-Ersatzteile zu verwenden.

(I)
Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati pezzi di ricambiago identici a quelli specificati.

(F)
Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

Documentation Technique Service Dokumentation Documentazione di Servizio Huolte-Ohje Manual de Servicio Manual de Servicic

Subject to modification

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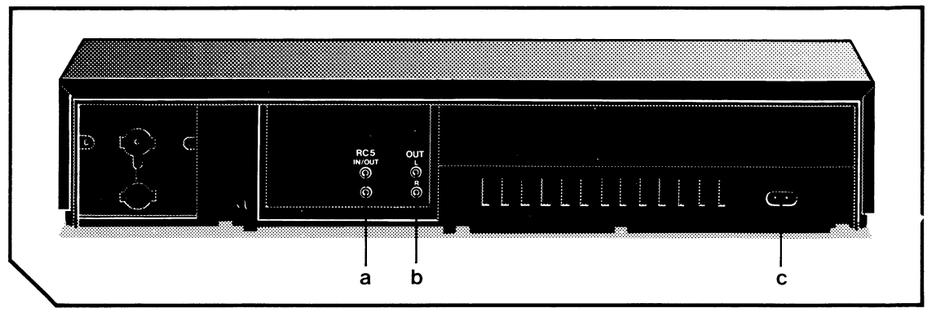

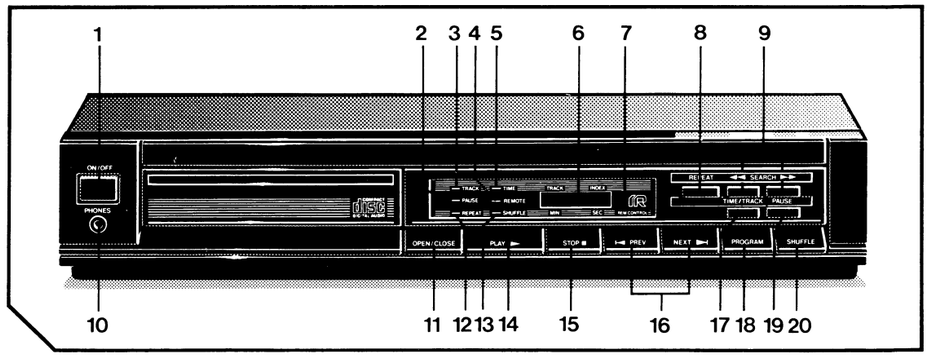

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OPERATION

Explanation of keys etc

1 **ON/OFF** key
For switching on and off.
2 **PAUSE** LED
lights up when the player is in the pause mode.
3 **TRACK** LED
Lights up when you switch on the player.
Indicates that the display is showing the track numbers and any index numbers of the disc.
4 **REMOTE** LED (CD 482 only)
lights up briefly when the REM CONTROL eye receives a command from the remote control.
5 **TIME** LED
Lights up during the display of the playing time of a track or the disc.
6 **MULTIMODE CD LED DISPLAY**
Informs you about the functioning of the player.
Displays details from the disc contents list.
7 **REM CONTROL** eye (CD 482 only)
Receives the signals from the remote control.
8 **REPEAT** key
For repeating a disc or a programme
9 <<**SEARCH**>> keys
For fast search to a particular passage during play.
('<<' backwards, '>>' forwards.)
10 **PHONES** socket
For connection of headphones.
11 **OPEN/CLOSE** key
For opening and closing the disc tray.
12 **REPEAT** LED
Lights up when you repeat a disc or programme.
13 **SHUFFLE** LED
Lights up when you play a disc in random order.
14 **PLAY** key
For starting play
For returning to the beginning of a track
15 **STOP/CM** key
For stopping play (STOP)
For erasing a programme (CM = Clear Memory).
16 **PREV** and **NEXT** keys
For selecting a previous or a later track during play.
For selecting the track number you want play to begin with.
For selecting track numbers when compiling a programme.
('PREV' from high to low, 'NEXT' from low to high.)
17 **TRACK/TIME** key
For selecting between track number and playing time indication.
18 **PROGRAM** key
For storing track numbers in a programme.
For erasing track numbers from a programme.
For checking the programme.
19 **PAUSE** key
For briefly interrupting play.
For holding play at the start of a disc, track or passage.
20 **SHUFFLE** key
For playing all tracks on a disc in random order.

CONNECTIONS

a RC5 IN/OUT: for a remote control system.
Use this connection for:
- Connecting up the equipment when you are incorporating the player in a PHILIPS HiFi-system with remote control.
- Connecting the remote control receiver EM 2200.

b OUT L R: For the connecting cable to the amplifier.
- Insert a red plug into the 'R' socket (right-hand channel) and the other plug into the 'L' socket (left-hand channel).
- Insert the two other plugs into the corresponding sockets of the CD or AUX input of your amplifier. You can also use the TUNER or TAPE IN connection, but **never** the PHONO input. This is not suitable for Compact Disc reproduction.

c Connection for the mains lead.

TECHNICAL DATA

Typical Audio Performance
- Number of Channels: 2
- Frequency Range: 2-20 000 Hz
- Output resistance: 200 Ω
- Nominal load impedance: 100 kΩ//100 pF
- Amplitude Linearity: ± 0,1 dB (20-20 000 Hz)
- Phase Linearity: ± 1.0° (20-20 000 Hz)
- Dynamic Range: 90 dB (20-20 000 Hz)
- Signal-to-Noise Ratio: 96 dB (20-20 000 Hz)
- Channel Separation: 98 dB (20-20 000 Hz)
- Total Harmonic Distortion: 0,003% (20-20 000 Hz)
- Wow and Flutter: quartz crystal precision
- D/A Conversion: quadruple oversampling (176.4 kHz) with digital filter and two 16 bit D/A converters
- Error Correction System: Cross Interleaved Reed Solomon Code (CIRC)
- Audio Output Level: 2 $V_{rms.}$
- Headphones load impedance: 32-600 Ω

Optical Readout System
- Laser: semi-conductor AlGaAs
- Wavelength: 780 nm

Signal Format
- Sampling Frequency: 44.1 kHz
- Quantization: 16 bit linear/channel

Power Supply
- Mains Voltage: see type plate at rear of player
- Mains Frequencies: 50 and 60 Hz
- Power Consumption: 15 W approx.
- Safety Requirements: IEC

Cabinet, general
- Dimensions (wxhxd)
  cabinet with tray closed: 420 x 75/81 x 280 mm approx.
  cabinet with tray opened: 420 x 75/81 x 410 mm approx.

Disc
- Diameter: 120 mm and 80 mm
- Thickness: 1.2 mm
- Direction of Rotation (seen from reading side): anti-clockwise
- Scanning Velocity: 1.2-1.4 m/s
- Rotation Speed: 500-200 rpm
- Playing Time (theoretical): 74 min (stereo)
- Track Pitch: 1.6 µm
- Material: plastic

The right is reserved to change data if necessary

This Compact Disc player complies with the radio interference requirements as laid down in EEC (European Economic Community) regulations.

SERVICING HINTS

In the set chip components have been applied.
For disassembly and assembly of chip components see the figure below.

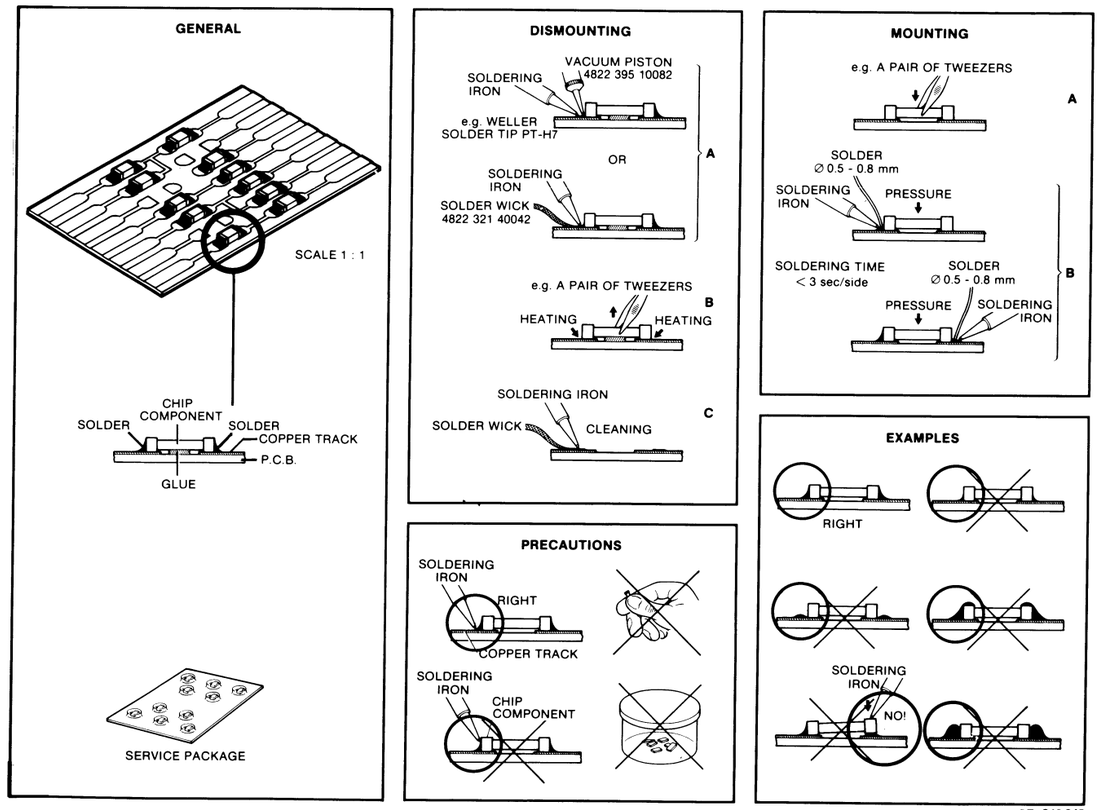
The disc should always rest properly on the turntable.
To achieve this a disc hold-down has been mounted in a bracket of the tray mechanism.
If the tray mechanism has to be disassembled for servicing, a separate disc hold-down should be used. For a service disc hold-down see drawing 42565 A12.

Test discs

It is important to treat the test discs with great care. The disorders on the discs (black spots, fingerprints, etc.) are exclusive and unambiguously positioned. Damage may cause additional drop-outs etc. rendering the intentional errors no longer exclusive. In that case it will no longer be possible to check e.g. the good working of the track detectors.

SERVICE TOOLS

Audio test disc (3)	4822 397 30085
Disc without errors (5)+ disc with DO errors, black spots and fingerprints (5A)	4822 397 30096
Disc 65 min 1kHz without pause	4822 397 30155
Torx screwdrivers	
Set (straight)	4822 395 50145
Set (square)	4822 395 50132
13th order filter	4822 395 30204
Service cable (5p)	4822 321 21273
Service cable (14p)	4822 321 21598
Service flexfoil (14p)	4822 322 40066
Service connector (14p)	4822 267 50676
Glass disc	4822 395 90204



27 012C12

GB WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

ESD

F ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).
Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

D WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall kan die Lebensdauer drastisch reduzieren.
Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes.
Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten.

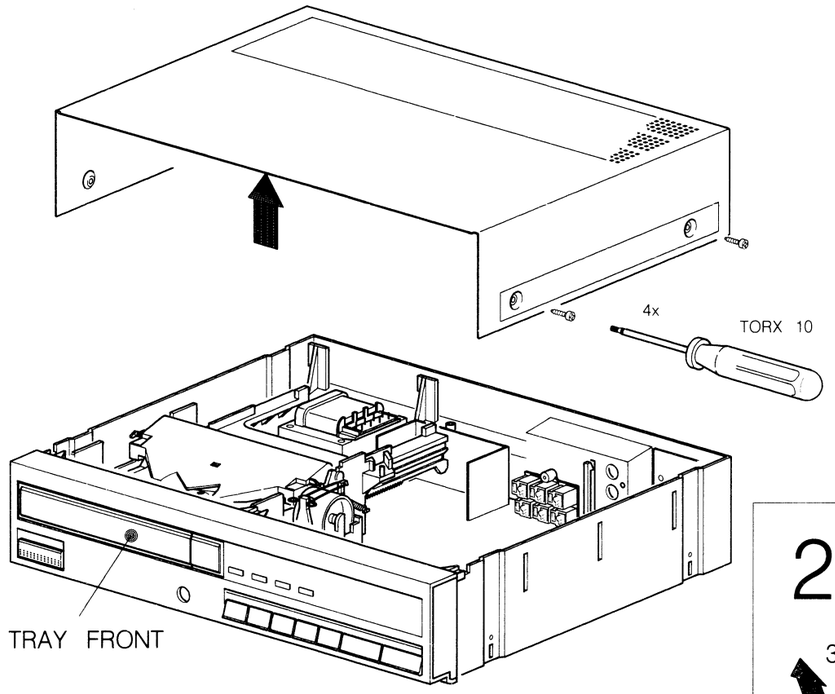
NL WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen.
Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

I AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

1



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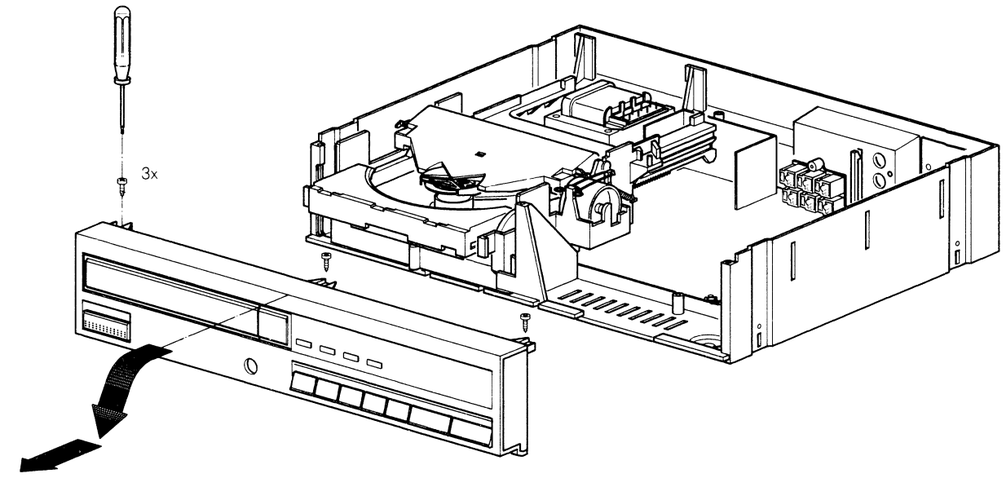

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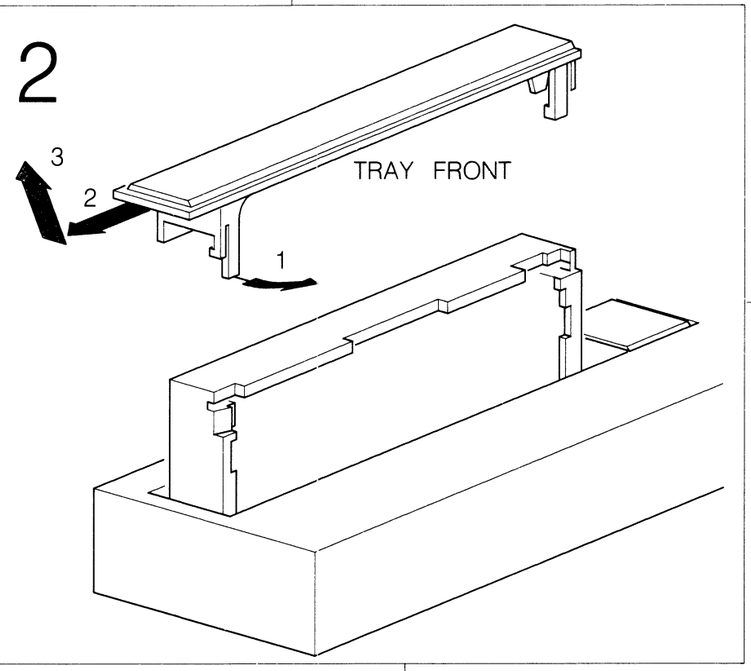

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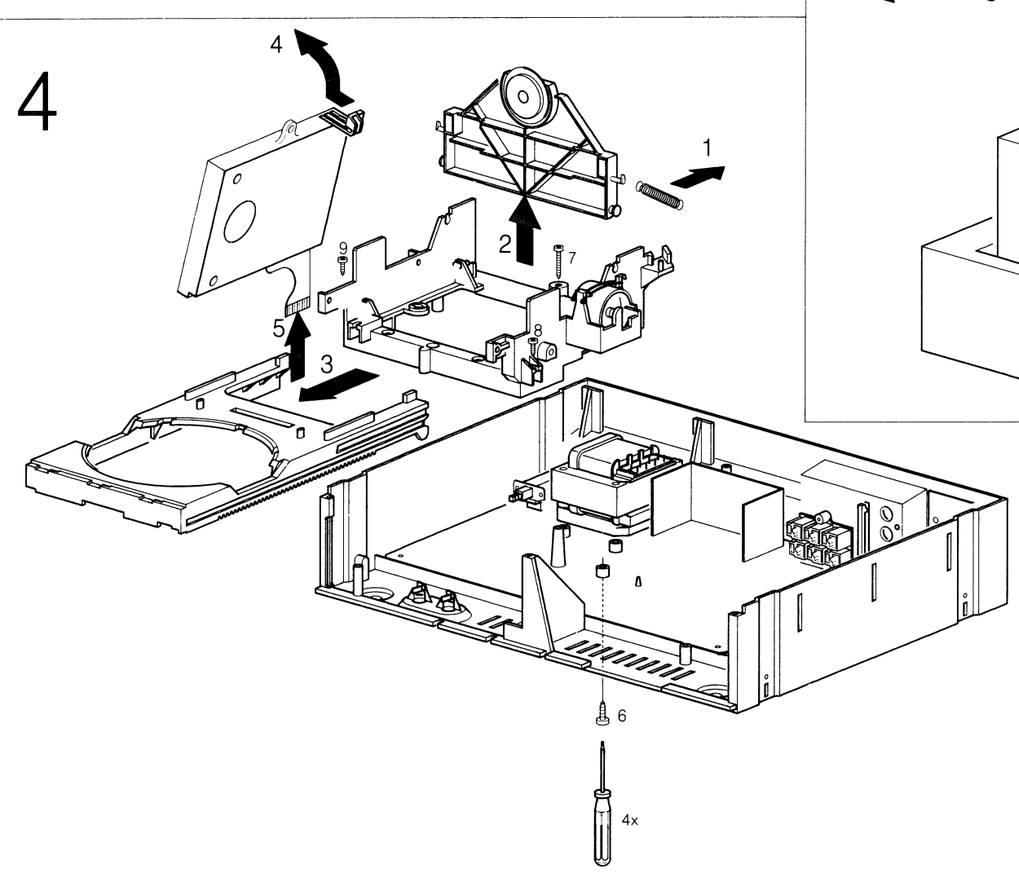

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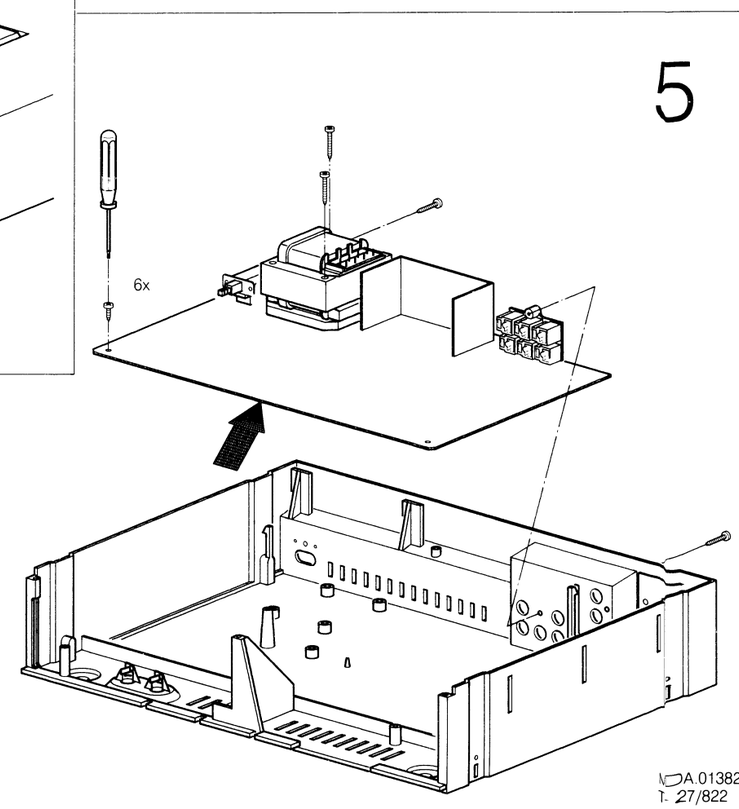
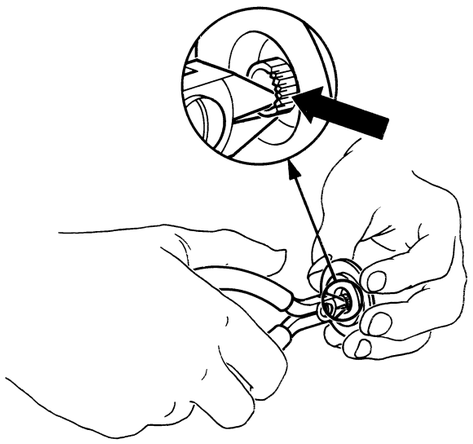


SERVICE DISC-HOLDDOWN



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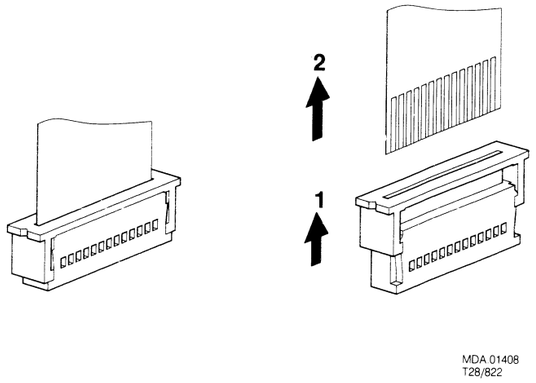
DEMOUNTING FOIL CDM



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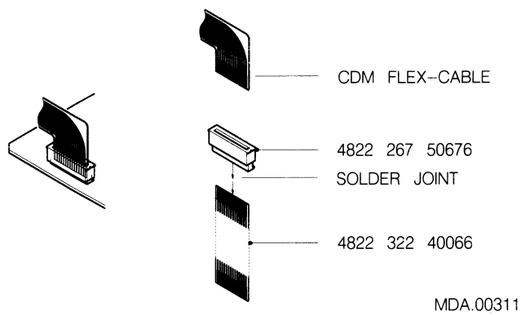
T28/822

SERVICE CDM FOIL



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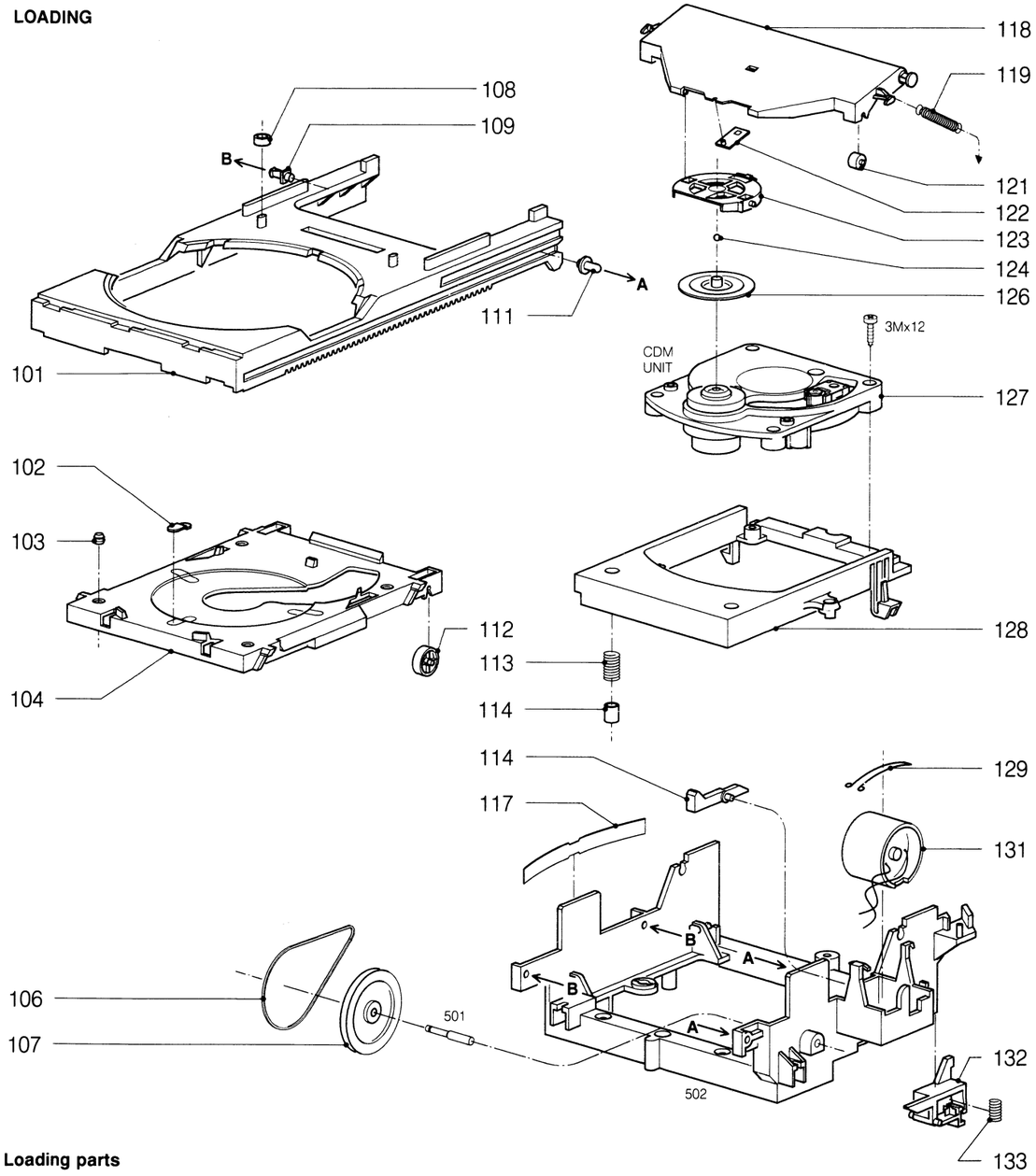
T19-730

LOADING



Loading parts

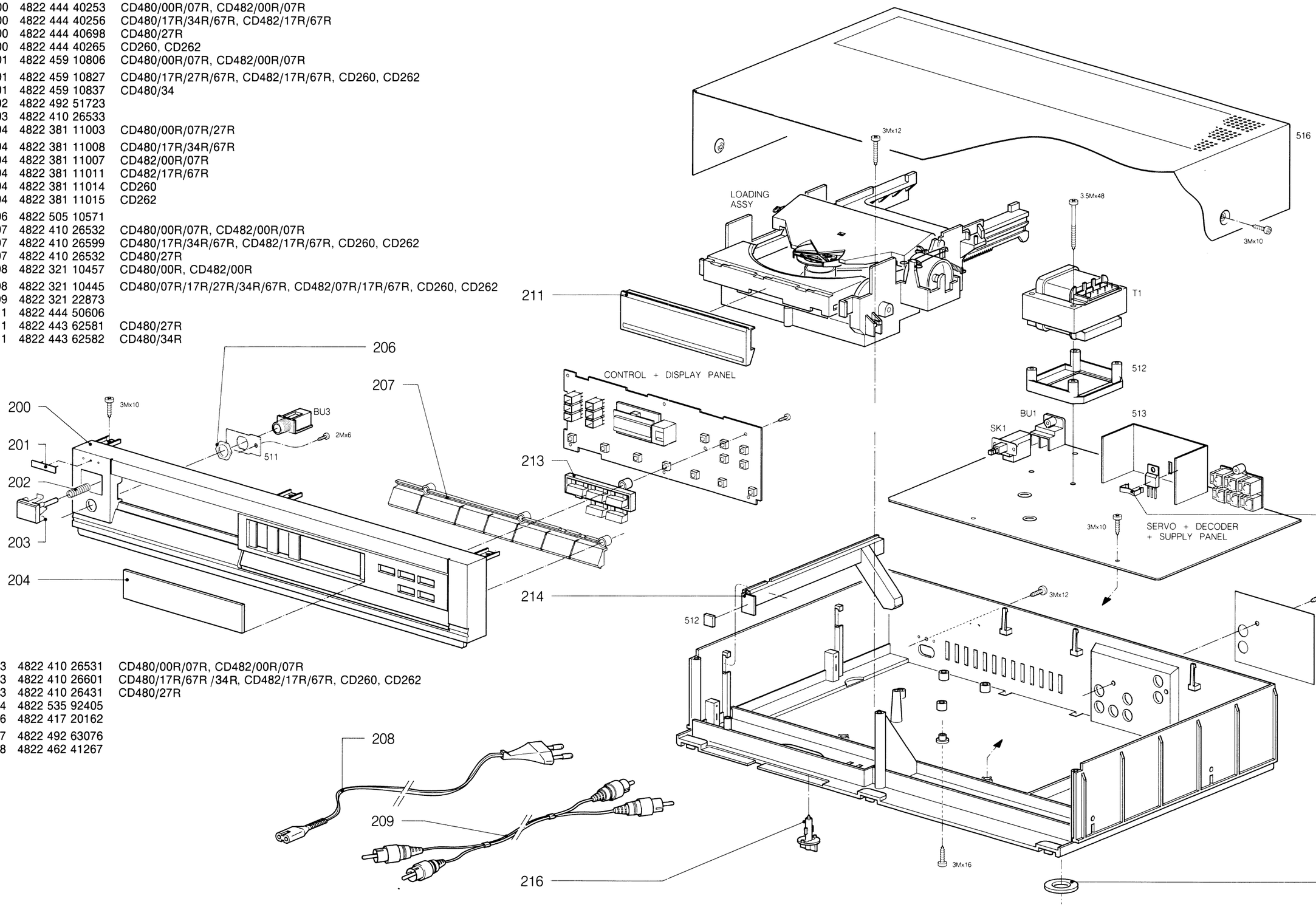
101	4822 444 50603	119	4822 492 32883
102	4822 325 50176	121	4822 528 90639
103	4822 325 50177	122	4822 466 92257
104	4822 466 92251	123	4822 402 61207
106	4822 358 10115	124	4822 520 40177
107	4822 522 32359	126	4822 530 80503
108	4822 532 51518	127	4822 691 30209
109	4822 402 61081	128	4822 402 61196
111	4822 402 61132	129	4822 492 63746
112	4822 528 90638	131	4822 361 20998
113	4822 492 51902	132	4822 402 50244
114	4822 466 61587	133	4822 492 51935
116	4822 402 61107		
117	4822 492 63659		
118	4822 444 60568		

EVA.00594
821/T19

CABINET PARTS

200	4822 444 40253	CD480/00R/07R, CD482/00R/07R
200	4822 444 40256	CD480/17R/34R/67R, CD482/17R/67R
200	4822 444 40698	CD480/27R
200	4822 444 40265	CD260, CD262
201	4822 459 10806	CD480/00R/07R, CD482/00R/07R
201	4822 459 10827	CD480/17R/27R/67R, CD482/17R/67R, CD260, CD262
201	4822 459 10837	CD480/34
202	4822 492 51723	
203	4822 410 26533	
204	4822 381 11003	CD480/00R/07R/27R
204	4822 381 11008	CD480/17R/34R/67R
204	4822 381 11007	CD482/00R/07R
204	4822 381 11011	CD482/17R/67R
204	4822 381 11014	CD260
204	4822 381 11015	CD262
206	4822 505 10571	
207	4822 410 26532	CD480/00R/07R, CD482/00R/07R
207	4822 410 26599	CD480/17R/34R/67R, CD482/17R/67R, CD260, CD262
207	4822 410 26532	CD480/27R
208	4822 321 10457	CD480/00R, CD482/00R
208	4822 321 10445	CD480/07R/17R/27R/34R/67R, CD482/07R/17R/67R, CD260, CD262
209	4822 321 22873	
211	4822 444 50606	
211	4822 443 62581	CD480/27R
211	4822 443 62582	CD480/34R

EXPLODED VIEW CABINET



213	4822 410 26531	CD480/00R/07R, CD482/00R/07R
213	4822 410 26601	CD480/17R/67R /34R, CD482/17R/67R, CD260, CD262
213	4822 410 26431	CD480/27R
214	4822 535 92405	
216	4822 417 20162	
217	4822 492 63076	
218	4822 462 41267	

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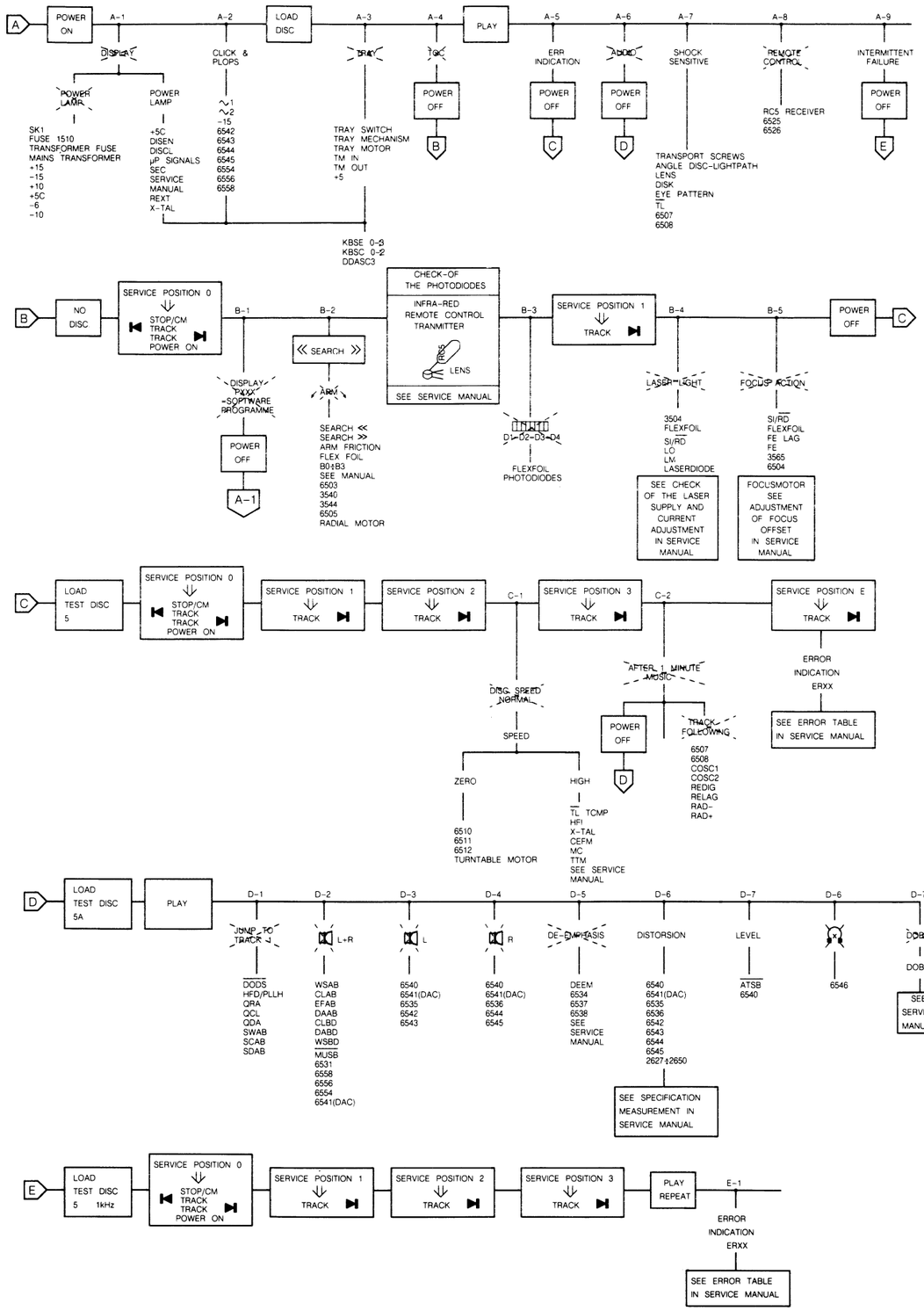
3-1

ELECTRICAL MEASUREMENTS AND ADJUSTMENTS



PRS.05133
T02/822

A1
µP-SIGNALS

SIGNAL	MODE	◇			REMARKS
RESET	POWER ON	100		PULS "HIGH"	
X-TAL	STAND BY	101		4MHz	
TRAY IN	OPEN/CLOSE	83			HIGH WHEN TRAY IS CLOSING
TRAY OUT	OPEN/CLOSE	83A			LOW WHEN TRAY IS OPENING
$\overline{ATSB}$	DISC SEARCH	89		"LOW"	
$\overline{MUTE}$	STAND BY PLAY	67		"HIGH"	

MDA 01389
T-08 823

B2
B0,B1,B2,B3 SIGNALS

SIGNAL	MODE		◇			REMARKS
B0	SERVICE POSITION 0 OR 1: SEARCH	≫	36		"LOW"	
	SERVICE POSITION 0 OR 1: SEARCH	≪	36		"LOW"	
B1	SERVICE POSITION 0 OR 1: SEARCH	≫	34		"HIGH"	
	SERVICE POSITION 0 OR 1: SEARCH	≪	34		"HIGH"	
B2	SERVICE POSITION 0 OR 1: SEARCH	≫	33		"LOW"	
	SERVICE POSITION 0 OR 1: SEARCH	≪	33		"HIGH"	
B3	SERVICE POSITION 0 OR 1: SEARCH	≫	32		"HIGH"	
	SERVICE POSITION 0 OR 1: SEARCH	≪	32		"HIGH"	

MDA 01386
T-08 823

B3
CHECK OF THE PHOTODIODES

STEP	SIGNAL	MODE	◇				REMARKS
1	–	POWER ON	4 6 7 8	–	–	SEE DRAWING 38314A12	SIGNAL DEPENDS ON DISTANCE LENS ⟷ IR LED OF REMOTE CONTROL REMOTE CONTROL CDM-4

MDA 01378
T-08 824

B4
CHECK OF LASER SUPPLY (WITH DEMOUNTED CDM AND ADDITIONAL CIRCUIT)

STEP	SIGNAL	MODE	◇				REMARKS
1	LO	SERV. POS. 2	9 V	–	1.8 < V < 2.3	–	SI=1 21 A K LITTLE LIGHT 33Ω GREEN LED to LO to LM SK 18Ω to ⊥ CONNECTED DIRECTLY TO PANEL
	LM	SK	11 V	–	170 < mV < 220	–	
2	LO	SERV. POS. 2	9 V	–	1.8 < V < 2.3	–	SI=1 21 A K LITTLE LIGHT 33Ω GREEN LED to LO to LM SK 18Ω to ⊥ CONNECTED DIRECTLY TO PANEL
	LM	SK	11 V	–	170 < mV < 220	–	
3	LO	POWER ON	9 V	–	0V ± 0.2V	–	A K NO LIGHT SI=0 21

MDA 01379
T-08 824

B4
LASER CURRENT ADJUSTMENT

STEP	SIGNAL	MODE	◇				REMARKS
1	–	POWER OFF	11 — Ω — GND	R3520	1kæ	–	PRE-ADJUSTMENT OHMIC VALUE
2	EYE-PATTERN HF	TEST DISC 5 PLAY	PIN 25 DECODER A (SAA7210) — 0V GND	–	–	SEE DRAWING 37017B8	IF NO SIGNAL SEE "START UP PROCEDURE"
3	LASER CURRENT ≙ VOLTAGE ACROSS R3501	TEST DISC 5 PLAY TRACK 1	1 — V — 2	R3520	50mV DC	–	–

MDA 01380
T-08 823

B5
ADJUSTMENT OF FOCUS-OFFSET

STEP	SIGNAL	MODE	◇				REMARKS
1	–	POWER ON	–	R3569	–	–	ADJUST FOR OPTICAL MID-POSITION
2	FE LAG	PLAY TEST DISC 5 TRACK 1	27	R3569	400mV ±40mV DC	–	FINE ADJUSTMENT

MDA 01381
T-08 824

B5
FOCUS ACTION

SIGNAL	MODE	◇			REMARKS
Si/$\overline{RD}$	SERVICE POSITION 1 WHEN REPEATING START UP PROCEDURE	21		PULS "LOW"	SEE DRAWING: MDA 01403
FE	TEST DISC 5A. SERVICE POSITION 1 WHEN REPEATING START UP PROCEDURE	26			SEE DRAWING: MDA 01413
FE-LAG	TEST DISC 5A.	27			SEE: ADJUSTMENT OF FOCUS-OFFSET

MDA 01384
T-08 823

C1
HIGH SPEED DISC ROTATION

SIGNAL	MODE	◇			REMARKS
$\overline{TL}$	TEST DISC 5. PLAY OR SERVICE POSITION 2	16		PULSES "LOW"	WHEN THE DISC IS SLOWLY BRAKED BY HAND
TCMP	TEST DISC 5. PLAY OR SERVICE POSITION 2	PIN 35 6530	+5V		AFTER 4 $\overline{TL}$ PULSES
HFI	TEST DISC 5. PLAY OR SERVICE POSITION 2	65			SEE DRAWING 37017B8
X-tal	TEST DISC 5A. PLAY OR SERVICE POSITION 2	69		11.28MHz	IF THIS FREQUENCY DEVIATES CHECK X-OUT ON FILTER-B
CEFM	TEST DISC 5A. PLAY OR SERVICE POSITION 2	68		4.32MHz	
MC	TEST DISC 5. PLAY OR SERVICE POSITION 2	81			SEE DRAWING 38849A12
TTM-	TEST DISC 5A. PLAY OR SERVICE POSITION 2	46	APPROX -1V		

MDA 01385
T-08 823

C2
TRACK FOLLOWING

SIGNAL	MODE	◇			REMARKS
RE dig	TEST DISC 5. PLAY OR SERVICE POSITION 3	37		PULSES "HIGH"	WHEN THE DISC IS SLOWLY BRAKED BY HAND
RE lag	TEST DISC 5. PLAY OR SERVICE POSITION 3	41	APPROX 2.5V DC		
RAD-	TEST DISC 5A. PLAY OR SERVICE POSITION 3	42			
RAD+	TEST DISC 5A. PLAY OR SERVICE POSITION 3	40			
C osc1	TEST DISC 5. PLAY OR SERVICE POSITION 3	30		650Hz	
C osc2	TEST DISC 5. PLAY OR SERVICE POSITION 3	31		650Hz	

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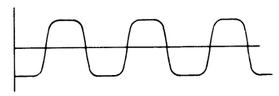
T-08 825



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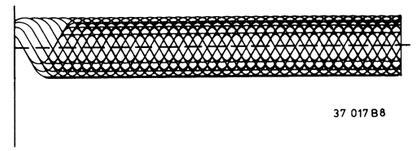

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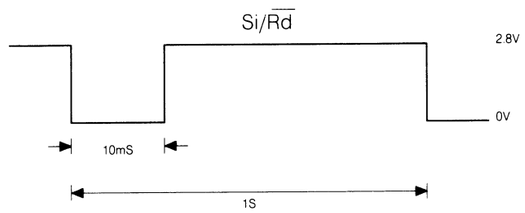
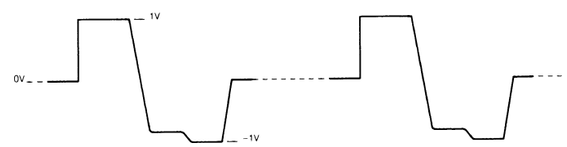


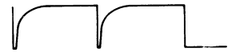
MDA 01403
T33/821



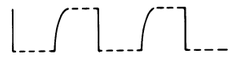
MDA 01413
T33/823

POSITION: STAND BY

POSITION PLAYER	POWER ON	SERVICE POSITION 3	PLAY	SEARCH PAUSE
$\overline{DODS}$ SIGNAL	"LOW"	"HIGH"	"HIGH"	



POSITION: PLAY (BEGINNING)



POSITION: PLAY (NORMAL)

38 849 A12

MDA 01143
T12 -651

MDA 00241
T07-804

D1
JUMP TO TRACK 1

SIGNAL	MODE	◇			REMARKS
$\overline{DODS}$	TEST DISC 5A, SEARCH ≫ OR SEARCH ≪	19			SEE DRAWING: MDA.01143
HFD/$\overline{PLLH}$	TEST DISC 5A: TRACK 15, PLAY	23		PULSES "LOW"	SEE DRAWING: MDA.00240 WHEN THE DISC IS SLOWLY BRAKED BY HAND
QRA	TEST DISC 5A, PLAY	75			SEE DRAWING: MDA.00453
QDA	TEST DISC 5A, PLAY	77			
QCL	TEST DISC 5A, PLAY	76			
SWAB	TEST DISC 5A, PLAY	78			SEE DRAWING: MDA.00239
SCAB	TEST DISC 5A, PLAY	79			SEE DRAWING: MDA.00239
SDAB	TEST DISC 5A, PLAY	80			SEE DRAWING: MDA.00239

MDA.01388
T-08 823

D2
NO AUDIO OUTPUT LEFT + RIGHT

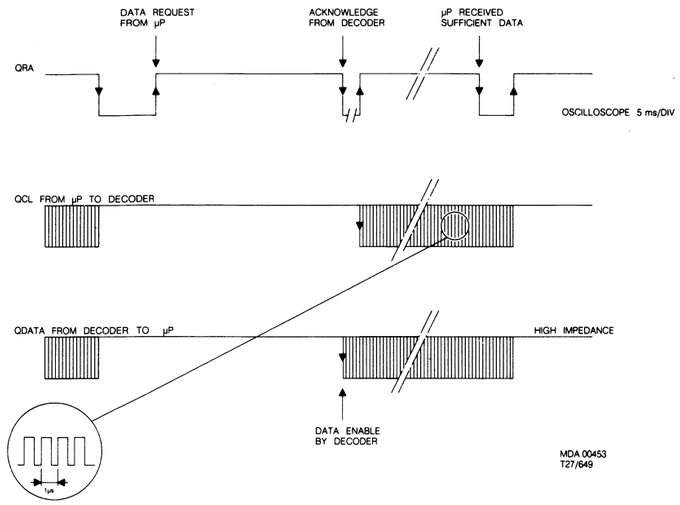
SIGNAL	MODE	◇			REMARKS
WSAB	DISC, PLAY	71			SEE DRAWING: 38847C12
CLAB	DISC, PLAY	72			SEE DRAWING: 38847C12
DAAB	DISC, PLAY	73		ACTIVITY	SEE DRAWING: 38847C12
EFAB	TEST DISC 5A,	74		PULSES	WHEN THE DISC IS SLOWLY BRAKED BY HAND
CLBD	DISC, PLAY	87			SEE DRAWING: 38848C12
DABD	DISC, PLAY	86		ACTIVITY	SEE DRAWING: 38848C12
WSBD	DISC, PLAY	85			SEE DRAWING: 38848C12
$\overline{MUSB}$	DISC, PAUSE, OR NEXT OR PREVIOUS	90		"LOW"	

MDA 01390
T-08 823

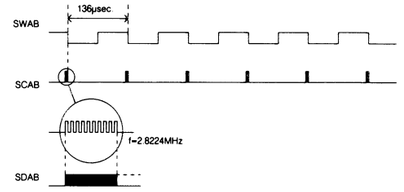
DAC IC

SIGNAL	MODE	◇			REMARKS
OUTPUT OF OP-AMP	DISC, PLAY	94		LF SIGNAL	LEFT CHANNEL
OUTPUT OF OP-AMP	DISC, PLAY	95		LF SIGNAL	RIGHT CHANNEL

MDA 01392
T-08 823

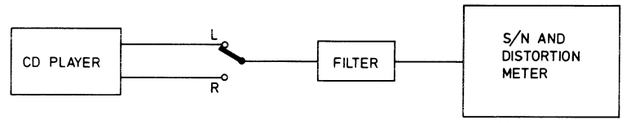


MDA 00453
T27/649



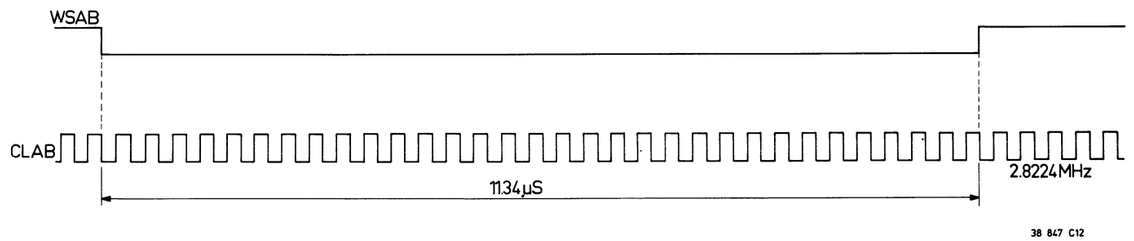
MDA 00239
T12/638

CD450

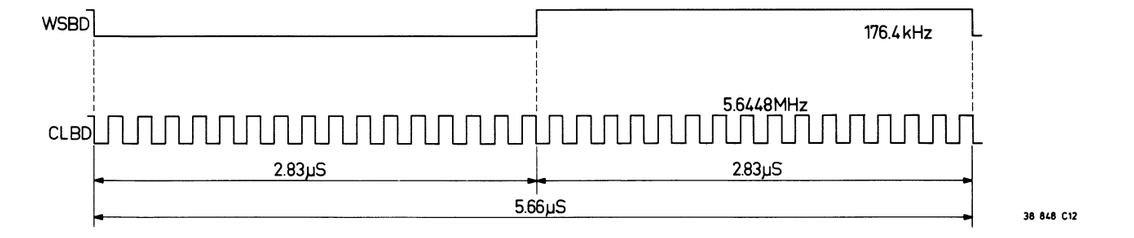


e.g. SOUND TECHNOLOGY ST 1700B

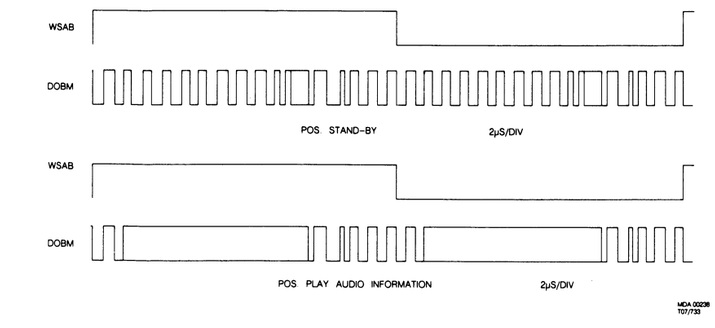
30 459 A12



38 847 C12



38 848 C12



MDA 00238
T07/733

D5
DEEM CIRCUIT

SIGNAL	MODE	◇			REMARKS
DEEM	TEST DISC 5A TRACK 14 PLAY TRACK 15 PLAY	84		LOW HIGH	SEE TESTPOINT 92 AND 91 ON DEEM CIRCUIT
TESTPOINT 92	TEST DISC 5A TRACK 14	92		LF SIGNAL	
TESTPOINT 92	TEST DISC 5A TRACK 15	92		NO SIGNAL	
TESTPOINT 91	TEST DISC 5A TRACK 14	91		LF SIGNAL	
TESTPOINT 91	TEST DISC 5A TRACK 15	91		NO SIGNAL	

MDA 01393
T-08 825

D6
SPECIFICATIONS MEASUREMENT

SIGNAL	MODE	◇			REMARKS
BU2-L	TEST DISC 3, PLAY, TOTAL HARMONIC DISTORSION	FILTER OUTPUT	⊢—⊣		SEE DRAWING 30459A12
BU2-R	TEST DISC 3, PLAY, TOTAL HARMONIC DISTORSION	FILTER OUTPUT	⊢—⊣		SEE DRAWING 30459A12
BU2-L	TEST DISC 3, PLAY, SIGNAL-TO-NOISE RATIO	FILTER OUTPUT	⊢—⊣		SEE DRAWING 30459A12
BU2-R	TEST DISC 3, PLAY, SIGNAL-TO-NOISE RATIO	FILTER OUTPUT	⊢—⊣		SEE DRAWING 30459A12

⊢—⊣ SEE TECHNICAL DATA

MDA 01395
T-08 832

D9
DOBM DIGITAL OUTPUT

SIGNAL	MODE	◇			REMARKS
DOBM	TEST DISC 5A, PLAY	88			SEE DRAWING MDA 00238

MDA 01391
T-08 823

ERROR TABLE

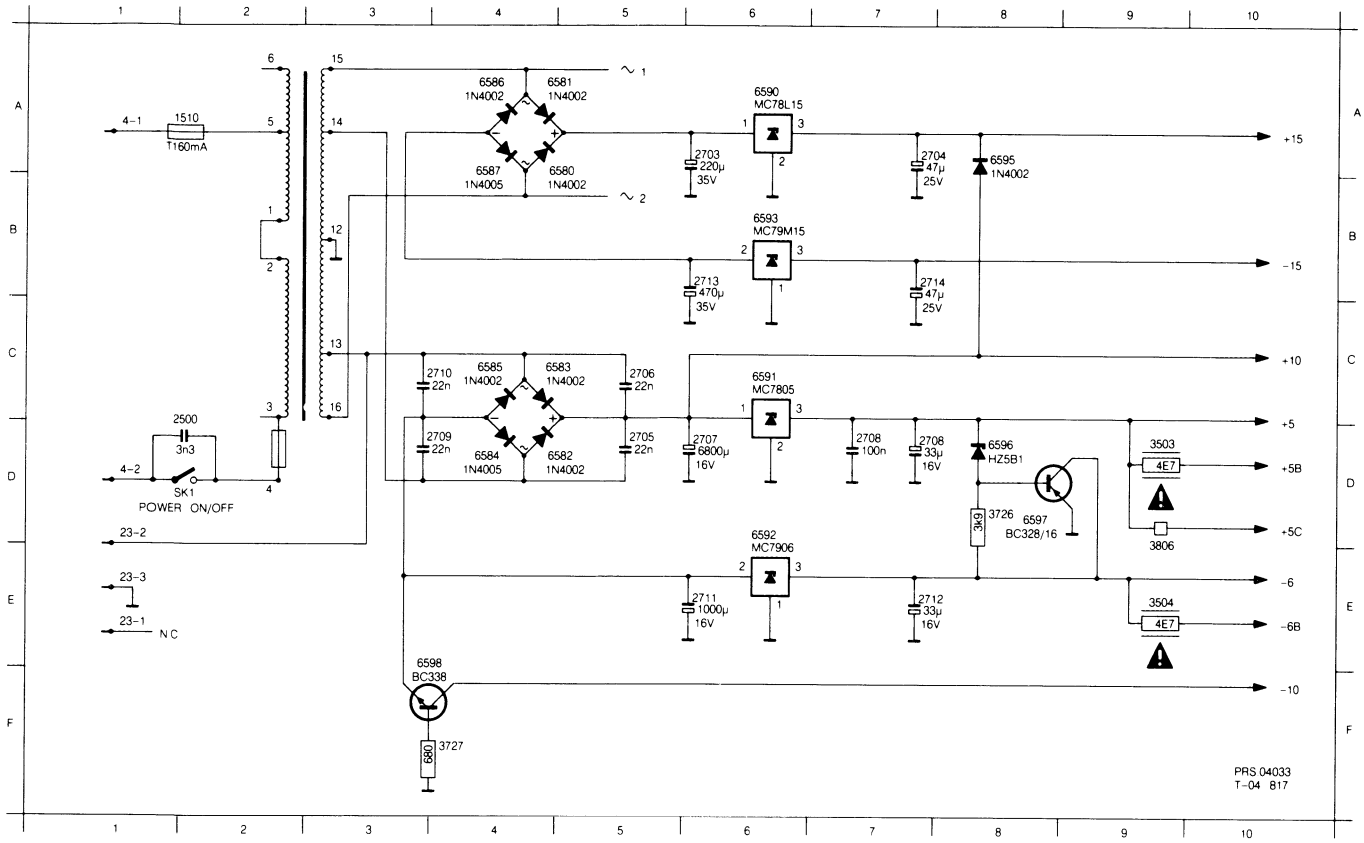
System errors

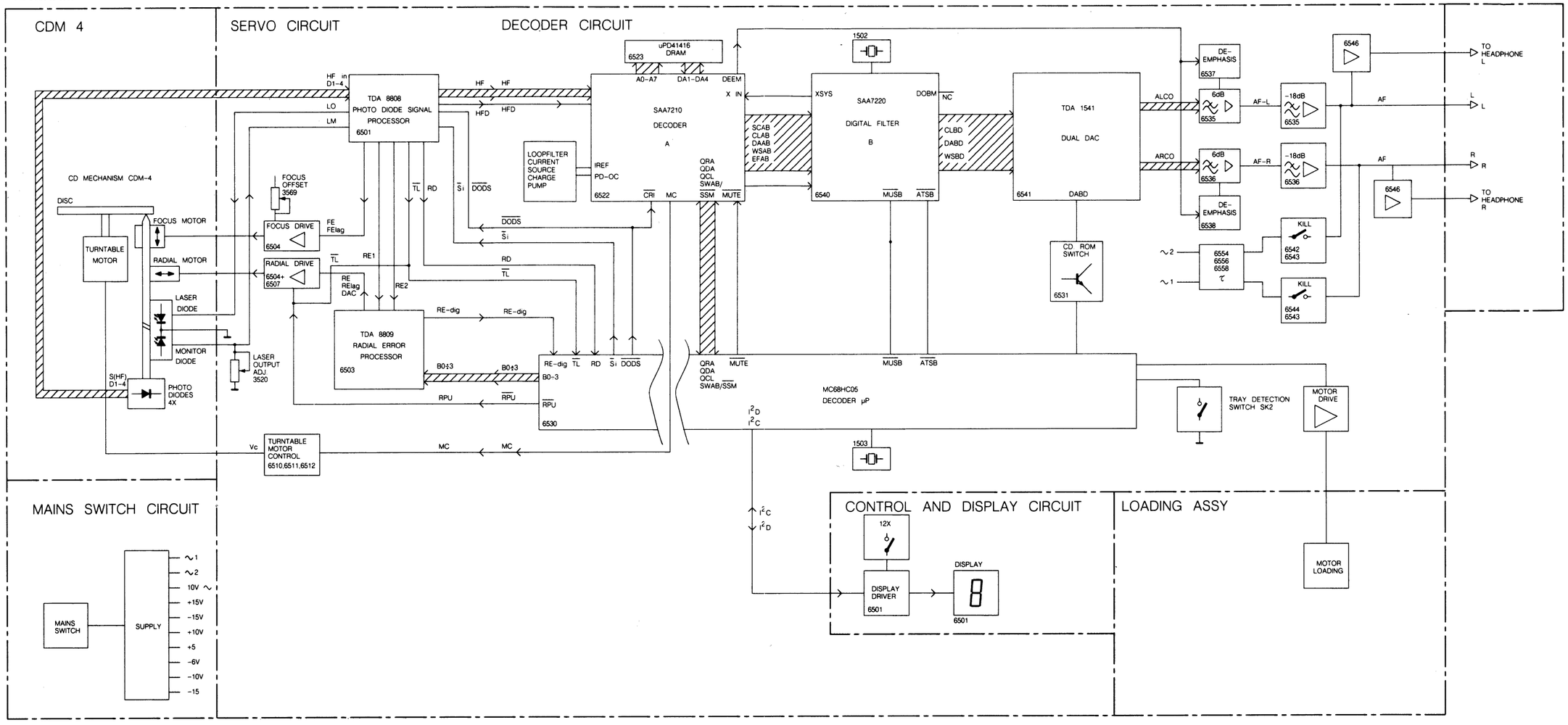
Indication	Cause	Check
Er 01	No RD	$\overline{Si}$, Sc, RD, Photodiode signal processor
Er 02	No $\overline{TL}$ pulse at start-up	$\overline{TL}$, HF, Photodiode signal processor, CD disc present
Er 03	No lead-in track found	CD disc, radial arm position, REdig, Radial error processor
Er 04	Too many $\overline{TL}$ pulses in PLAY	CD disc, $\overline{HFD}$
Er 05	$\overline{TL}$ pulse > 50 msec. in PLAY	CD disc, HF in, photodiodes
Er 06	No $\overline{TL}$ pulse within 0.5 sec. during track jumping	RE-lag circuit
Er 07	Subcoding error during PLAY	HF
Er 08	TOC error	CD disc, turntable motor control, radial arm position

Operating errors

Er 30 "NEXT" key operated during the last track, with "REPEAT" turned off.
Er 31 "PREVIOUS" key operated during the first track, with "REPEAT" turned off.
Er 32 Index selected before a track has been selected.
Er 33 The selected index number does not exist on this disc.
Er 34 Programme survey requested; no programme present.
Er 35 The programme memory is full.
Er 36 The progammed track is not present on this CD disc.
Er 37 The selected track is not present on this CD disc.
Er 60 End of the "FAST FORWARD" search motion.
Er 61 End of the "FAST REVERSE" search motion.

1510	A 2	2705	D 5	2708	D 8	2712	E 8	3504	E 9	6580	A 5	6584	D 4	6590	A 6	6595	A 8	SK1	D 2
2500	C 2	2706	C 5	2709	D 4	2713	B 6	3726	D 8	6581	A 5	6585	C 4	6591	C 6	6596	D 8		
2703	A 6	2707	D 6	2710	C 4	2714	B 8	3727	F 4	6582	D 5	6586	A 4	6592	D 6	6597	D 8		
2704	A 8	2708	D 7	2711	E 6	3503	D 9	3806	D 9	6583	C 5	6587	A 4	6593	B 6	6598	E 4		





PRS 05151
T02-823

AGC	–	Automatic Gain Control
B0-B3	–	Control bits for radial circuit
BEQ	–	Equalizer reference current input
BGC	–	DC and LF gain control reference input
Cosc1	–	Capacitor wobble oscillator
Cosc2	–	Capacitor wobble oscillator
DEC	–	Decoupling input of inkruat bypass
DET	–	HF detector voltage input
DIV4	–	Divide by 4 input
$\overline{DODS}$	–	Drop out detector suppression
D1÷4	–	Photodiode currents
FE	–	Focus error signal
FE lag	–	Focus error signal for LAG network
HF	–	HF output for DEMOD
HFD	–	HF detector output for DEMOD
HF-in	–	HF current input to HF amplifier
HF-out	–	HF amplifier and equalizer voltage output
LM	–	Laser monitor diode input
LO	–	Laser amplifier current output
MC	–	Motor control signal
offset IN	–	Offset control input
offset OUT	–	Offset control output
PLLH	–	PLL on hold output
RADout	–	output of RE2-RE1 input
RE	–	Radial error signal (Amplified RE_2-RE_1 currents)
Rosc	–	Resistor wobble oscillator
Rwob	–	Wobble generator input
RE1	–	Radial error signal 1 (summation of amplified currents D_3 and D_4
RE2	–	Radial error signal 2 (summation of amplified currents D_1 and D_2
RE dig	–	Radial error digital
RE lag	–	Radial error signal for LAG network
Sc	–	Starting up capacitor input
Si/$\overline{RD}$	–	On/off control for laser supply and focus circuit. Ready signal, Starting up procedure succesful.
$\overline{TL}$	–	Track loss output signal
TTM–	–	Control voltage for turntable motor
TTM+	–	Control voltage for turntable motor
Vext–	–	Supply connection
Vext+	–	Supply connection
$\overline{ATSB}$	–	Attenuation of Audio level in Search position (Cueing)
CD ROM Switch	–	Digital Data information on disc signal
CEFM	–	Clock Eight-to-Fourteen Modulator
CLAB	–	Clock signal Decoder-A to Filter-B
CLBD	–	Clock signal Filter-B to DAC
$\overline{CREF}$	–	Reference Current
$\overline{CRI}$	–	Counter Reset Inhibit
DAAB	–	Data signal Decoder-A to Filter-B
$\overline{DABD}$	–	Data signal Filter-B to DAC
$\overline{DEEM}$	–	Deemphasis
DOBM	–	Digital out signal
$\overline{EFAB}$	–	Error flag Decoder-A to Filter-B
$\overline{MUTE}$	–	Mute signal
$\overline{MUSB}$	–	Soft Mute signal
PD/OC	–	Phase detector - oscillator control
QCL	–	Q-channel Clock signal
QDA	–	Q-channel Data signal
QRA	–	Q-channel Request Aknowledge
SCAB	–	Subcode clock Decoder-A to Filter-B
SDAB	–	Subcode data Decoder-A to Filter-B
SWAB/$\overline{SSM}$	–	Subcode Word/Start-stop motor signal
WSAB	–	Word select Decoder-A to Filter-B
WSBD	–	Word Select Filter-B to DAC
XIN	–	Oscillator signal in Decoder-A
XSYS	–	Oscillator signal out Filter-B

1001 J 1 2504 F 3 2510 F 9 2530 I 14 2537 K12 2544 L12 2561 M 9 2572 M16 2624 A10 3508 E 6 3523 J 2 3538 D11 3545 L12 3554 I 20 3562 M10 3568 M11 3575 M15 3581 N15 3587 O16 3623 B15 3802 I 10 6505 F19 6511 N19 6516 N16
1002 K 1 2505 E 4 2511 F 8 2531 I 14 2537 I 13 2545 F20 2562 M13 2563 L13 2620 A 9 3501 F 3 3509 L 9 3524 J 3 3540 F20 3550 J19 3555 I 20 3563 M13 3569 M12 3627 A 8 3803 I 3 6506 E19 6512 N17 6512 M14 6526 A15
1003 J 1 2506 E 5 2514 E 6 2532 I 16 2538 K12 2547 I 9 2565 J11 2621 A 9 3502 F 3 3510 I 10 3520 L 3 3533 H18 3542 F20 3551 I19 3557 J20 3565 L13 3571 O19 3578 N17 3583 N15 3589 N13 3628 A 8 3805 C 4 6507 D11 6507 I19 6513 M16 6527 J 3
1503 A 9 2507 E 6 2515 H11 2534 G19 2540 E20 2551 I 21 2565 J11 2621 A 9 3505 E 7 3520 L 3 3534 G19 3543 E19 3552 I 20 3560 L10 3566 L13 3573 N18 3579 N16 3584 M14 3585 M14 3620 A14 3629 A 9 6503 D11 6507 I19 6513 M16 6527 J 3
2501 F 2 2508 G 9 2520 J 3 2535 I 15 2540 E20 2551 I 21 2570 M17 2622 A 7 3506 D 6 3521 J 3 3535 D13 3544 K12 3553 H20 3561 K10 3567 L11 3574 M15 3580 O15 3586 O16 3622 A15 3646 A 7 6504 D19 6508 H20 6514 N15 6530 A 5
2503 E 4 2509 F 8 2521 J 3 2536 I 15 2542 L12 2560 K10 2571 N14 2623 A 9 3507 E 8 3522 J 3 3535 D13 3544 K12 3553 H20 3561 K10 3567 L11 3574 M15 3580 O15 3586 O16 3622 A15 3647 A 4 6504 K11 6510 M19 6515 N15

SERVO

DECODER-A IC6522 — DODS, HF, HF D

6530 MC68HC05C8 µP — CLOCK, INT/T0, T1, RE-dig, RESET, Vdd, XTAL1, XTAL2, IRQ, CPU, I/O PORTS

DECODING 2 KILL

4 MHz

6503 TDA8809 — ROM, 3 1/2-BIT DAC, RADIAL, LAG, SHORT CIRCUIT

C.D.M. — FLEX PRINT (FOIL)

DIODE ASSEMBLY — D1, D2, D3, D4, GUARD RING PHOTODIODE

LASER ASSEMBLY — 1002 LASER, MONITOR

HF AMPLIFIER — EQUALIZER — GAIN CONTROL — HF AMPLITUDE SLICERS — HFL, DO, DODS, HFD

STARTING CIRCUIT — LASER SUPPLY — LASER OUTPUT ADJ

FOCUS NORMALIZING CIRCUIT — FE, FS, FElag

6501
PHOTO DIODE SIGNAL PROCESSOR
TDA 8808 ©

RADIAL DRIVE

RADIAL ERROR PROCESSOR — INTEGRATING AMPLIFIER — OSCILLATOR 650Hz — LAG HOLD — RADIAL — LAG SHORT CIRCUIT — U/I

6504-(1/2)B TCA0372(A) — 6506 HZ7C2 7V5 — 6505 HZ7C2 7V5

6507-(1/2)A NJM4560D — 6507-(1/2)B NJM4560D

RC5 IN, RC5 OUT

TO RADIAL MOTOR VIA FLEX PRINT

FOCUS DRIVE

6504 TCA0372(B)

TURNTABLE MOTOR CONTROL

6512 -(1/2)A NJM4560 — 6512 -(1/2) NJM4560

TCMP DECODING 1 6530

TO FOCUS MOTOR VIA FLEX PRINT

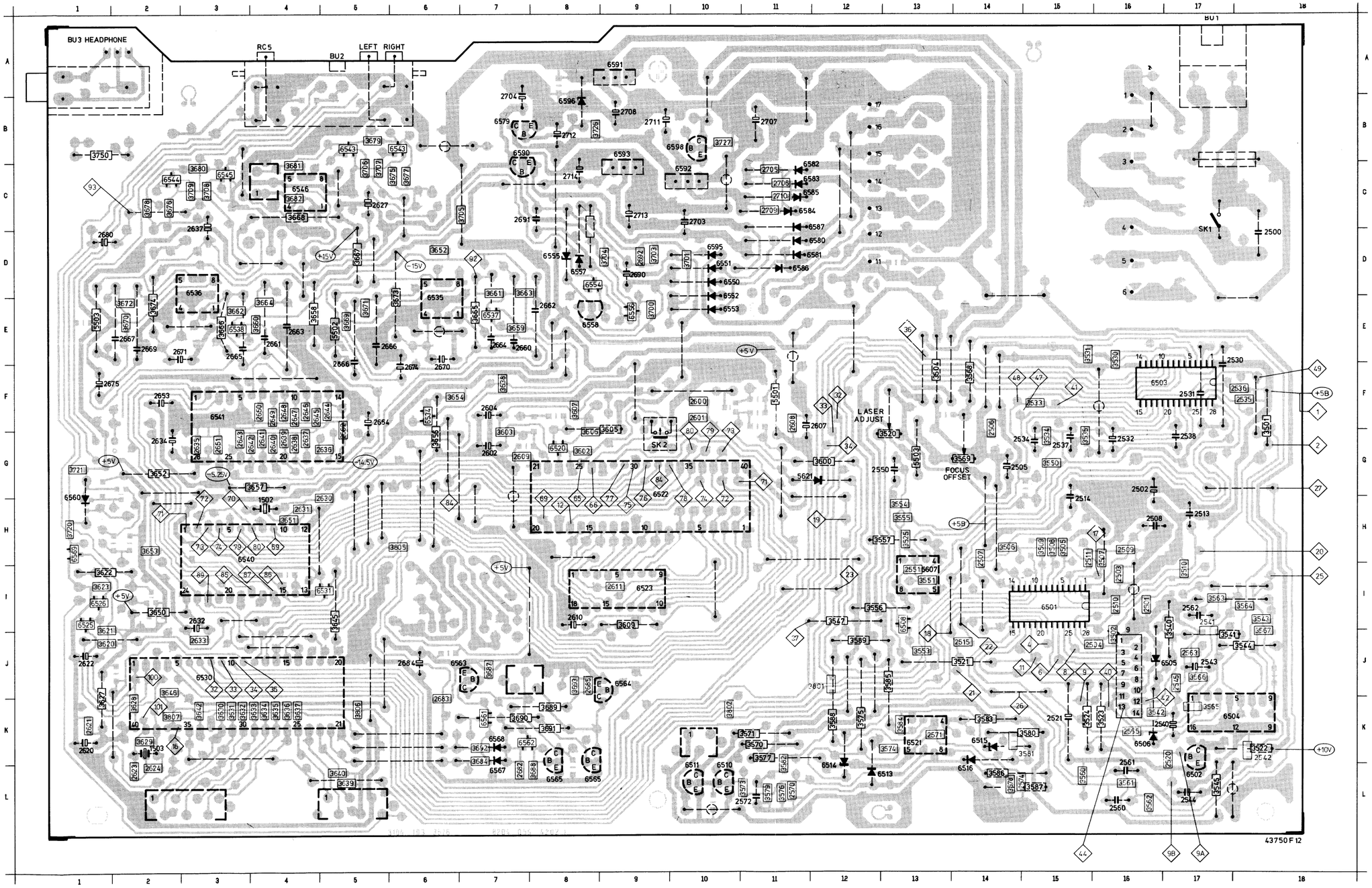
TO TURNTABLE MOTOR CIRCUIT

DECODER-A IC6522 { MC

-CHIP JUMPER (0ae)

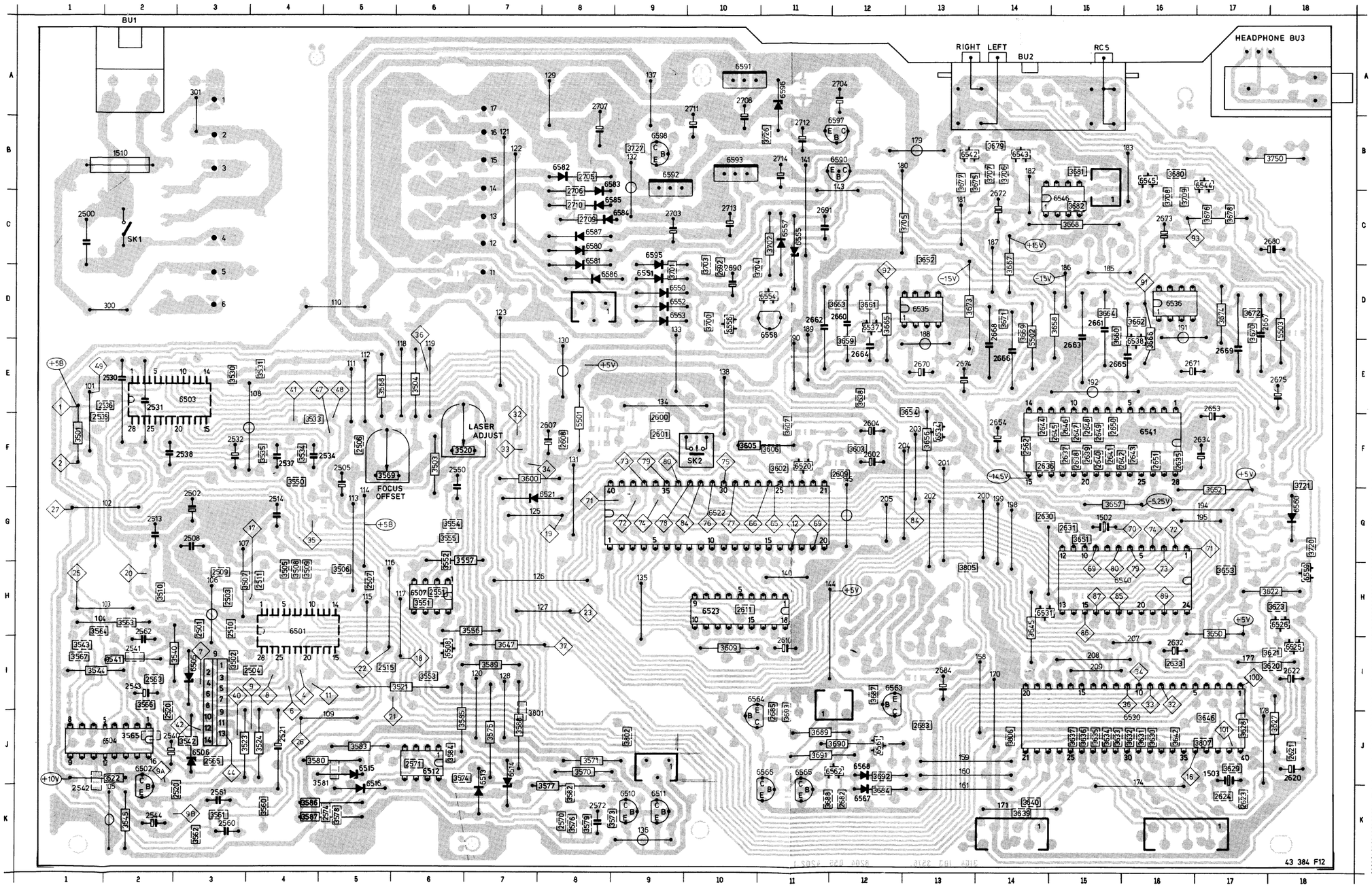
PHS 04055
T 07-832

CS 17 548



1502	H 4	2711	B 9	3669	E 5	6598	C10								
1503	K 2	2712	B 8	3670	E 2	BU 1	A17								
2500	D18	2713	D 9	3671	E 5	BU 2	A 5								
2501	I16	2714	C 8	3672	E 2	BU 3	A 1								
2502	G16	3501	G18	3673	E 6	SK 1	D17								
2503	I16	3502	J16	3674	E 2	SK 2	G 9								
2504	J15	3504	F13	3675	C 6										
2505	G14	3505	H15	3676	C 3										
2506	G14	3506	H14	3677	C 6										
2507	H14	3507	H16	3678	C 2										
2508	H16	3508	H15	3679	B 5										
2509	H16	3509	H15	3680	C 3										
2510	I16	3510	I17	3681	C 4										
2511	H15	3520	G13	3682	C 4										
2513	H17	3521	J14	3684	K 7										
2514	H15	3522	K18	3687	J 7										
2515	J14	3523	K16	3688	L 8										
2520	K16	3524	K15	3689	K 8										
2521	K15	3525	K13	3690	K 7										
2530	F17	3530	F16	3691	K 8										
2531	F17	3531	F15	3692	K 7										
2532	G16	3533	F15	3693	J 8										
2534	G14	3534	G15	3700	E 9										
2535	F18	3535	G15	3701	D10										
2536	F17	3540	I17	3703	D 9										
2537	G15	3541	I17	3704	D 9										
2538	G17	3542	K16	3705	C 7										
2540	K16	3543	I18	3706	C 5										
2541	J17	3544	J17	3707	C 6										
2542	K18	3545	L17	3708	C 3										
2543	J17	3547	I12	3709	C 3										
2544	L17	3550	G15	3720	H 1										
2545	J17	3551	I13	3721	G 1										
2550	G12	3553	J13	3726	B 9										
2551	I13	3554	H13	3727	*B10										
2560	L16	3555	H13	3750	C 2										
2561	K16	3556	I12	3801	J12										
2562	F 5	3557	H13	3802	K10										
2562	I17	3560	L15	3805	H 6										
2563	J17	3561	L16	3806	L 5										
2565	K16	3562	L16	3807	K 3										
2570	L11	3563	I17	5501	F11										
2571	K13	3564	I17	5502	E 5										
2572	L11	3565	K17	5503	E 2										
2574	L14	3566	J17	5503	G13										
2600	F10	3567	J18	5607	I13										
2601	F10	3568	F14	5621	G11										
2602	G 7	3569	G14	6501	I15										
2604	F 7	3570	M11	6502	L17										
2607	G12	3571	M11	6503	F16										
2608	F11	3573	L11	6504	K17										
2609	G 8	3574	M13	6505	J16										
2610	I 9	3575	M12	6506	K16										
2611	I 9	3576	L11	6508	I13										
2620	K 1	3577	M11	6510	K10										
2621	K 2	3578	L14	6511	K10										
2622	J 1	3579	M11	6513	L13										
2623	K 2	3580	M14	6514	L12										
2624	K 2	3581	M14	6515	K14										
2627	C 6	3582	M1	6516	L14										
2630	H 5	3583	M14	6520	G 8										
2631	H 4	3584	M13	6521	K13										
2632	I 3	3585	J3	6522	H 9										
2633	J 3	3586	L14	6523	I 9										
2634	G 2	3587	L5	6525	I 1										
2635	G 3	3588	K2	6526	I 2										
2636	G 5	3589	G2	6530	I 3										
2637	G 5	3600	G2	6531	I 5										
2637	D 3	3602	D8	6534	F 6										
2638	G 4	3603	G7	6535	E 6										
2639	G 4	3605	G9	6536	E 3										
2640	G 4	3606	G8	6537	E 7										
2641	G 4	3607	F8	6538	E 4										
2642	G 4	3609	I9	6540	H 4										
2643	G 4	3620	J2	6541	F 3										
2644	F 5	3621	I2	6543	B 5										
2645	F 5	3622	I2	6543	C 6										
2646	F 5	3623	I2	6544	C 3										
2647	F 4	3627	J2	6545	C 3										
2648	F 4	3628	K2	6546	C 4										
2649	F 4	3629	K2	6550	D10										
2650	F 4	3630	K3	6551	D10										
2651	G 3	3631	K4	6552	E10										
2653	F 3	3632	K4	6553	E10										
2654	F 6	3633	K4	6554	D 9										
2660	E 8	3634	K4	6555	D 8										
2661	E 4	3635	K4	6556	E 9										
2662	E 8	3636	K4	6557	D 8										
2663	E 4	3637	K4	6558	E 8										
2664	E 7	3638	F7	6560	H 1										
2665	F 4	3639	L5	6561	K 7										
2666	F 5	3640	L5	6562	K 8										
2666	E 6	3642	K3	6563	J 7										
2667	E 2	3645	I5	6564	J 9										
2670	F 6	3646	J3	6565	L 8										
2671	E 3	3650	I2	6565	L 9										
2674	F 6	3651	H4	6567	L 7										
2675	F 2	3652	G2	6568	K 7										
2680	D 2	3652	D6	6569	H 1										
2682	L 8	3653	H2	6579	B 7										
2683	K 6	3654	F7	6580	D12										
2684	J 6	3656	G6	6581	D12										
2685	C11	3657	G4	6582	C11										
2690	D 9	3658	E5	6583	C11										
2691	D 7	3659	E7	6584	C11										
2692	D 9	3660	E4	6585	C11										
2703	D10	3661	E7	6586	D11										
2704	B 7	3662	E4	6587	D12										
2705	C11	3663	E8	6590	C 7										
2706	C11	3664	E4	6591	A 9										
2707	B11	3665	E7	6592	C10										
2708	B 9	3666	E3	6593	C 9										
2709	C11	3667	D5	6595	D10										
2710	C11	3668	D4	6596	B 8										

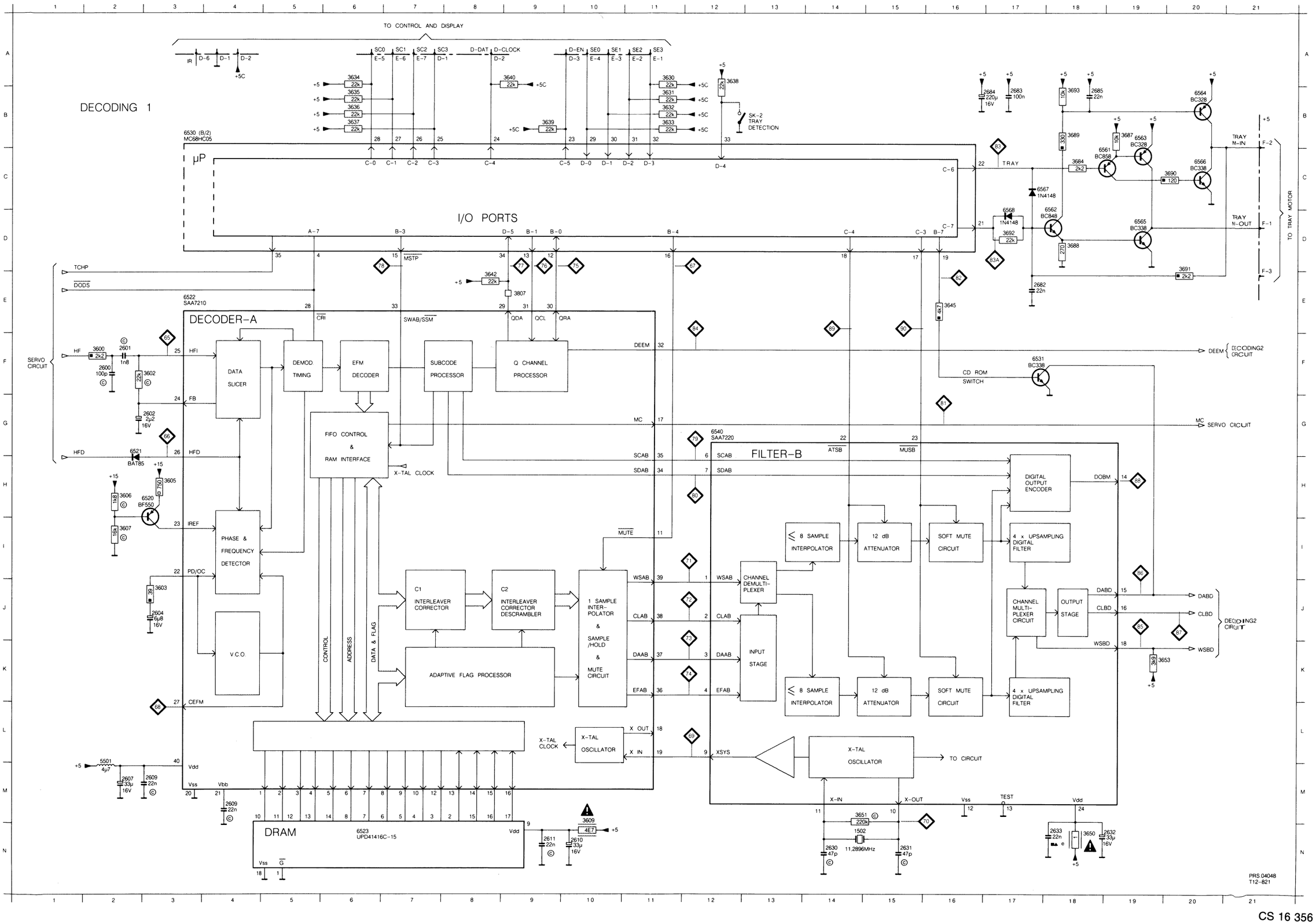
PRS.04182
T33/834
BEH.BIJ 43750F



1502	G15	2708	A10	3665	D12	6587	C 8
1503	J17	2709	C 8	3666	E16	6590	B12
1510	B 2	2710	C 8	3667	D14	6591	A10
2500	C 2	2711	B10	3668	C15	6592	B 9
2501	H 3	2712	B11	3669	D14	6593	B10
2502	G 3	2713	C10	3670	D17	6595	C 9
2503	H 3	2714	B11	3671	D14	6596	A11
2504	I 4	3501	F 1	3672	D17	6597	B12
2505	F 5	3502	I 4	3673	D13	6598	B 9
2506	F 5	3503	F 6	3674	D17	BU1	A 2
2507	H 5	3504	E 6	3675	C13	BU2	A14
2508	G 3	3505	H 4	3676	C16	BU3	A18
2509	H 3	3506	H 5	3677	C13	RC5	A15
2510	H 4	3507	H 4	3678	C17	SK1	C 2
2511	H 4	3508	H 4	3679	B14	SK2	F10
2513	G 2	3509	H 5	3680	B16		
2514	G 4	3510	H 3	3681	B15		
2515	I 6	3520	F 7	3682	C15		
2520	I 3	3522	J 2	3684	J12		
2520	J 3	3523	J 4	3687	I12		
2521	J 4	3524	J 4	3688	K11		
2530	E 2	3530	E 4	3689	J11		
2531	E 2	3531	E 4	3690	J12		
2532	F 4	3533	F 5	3691	J11		
2534	F 5	3534	F 4	3692	J12		
2535	F 2	3535	F 4	3693	I11		
2536	E 2	3540	I 3	3700	D10		
2537	F 4	3541	I 2	3701	D 9		
2538	F 3	3542	J 3	3702	C11		
2540	J 3	3543	I 1	3703	D10		
2541	I 2	3544	K 2	3704	D10		
2542	J 1	3545	K 2	3705	C12		
2543	I 2	3550	F 4	3706	B14		
2544	K 2	3551	H 6	3707	B14		
2550	F 6	3552	G 6	3708	C16		
2551	H 6	3553	G 6	3709	C16		
2560	K 3	3554	G 6	3720	G18		
2561	K 3	3555	G 6	3721	G18		
2562	H 2	3556	H 7	3726	B11		
2562	F14	3557	G 7	3727	B 9		
2563	I 2	3560	K 4	3750	B17		
2565	J 3	3561	K 3	3801	I 8		
2570	K 8	3562	K 3	3802	J 9		
2571	J 6	3563	H 2	3805	H13		
2572	K 8	3564	H 2	3806	J14		
2574	K 5	3565	J 2	3807	J14		
2600	F 9	3566	I 2	3807	J16		
2601	F 9	3567	I 1	5321	I 6		
2602	F12	3568	E 6	5501	F 8		
2604	F12	3569	F 6	5502	E14		
2607	F 8	3570	J 8	5503	D17		
2608	F 8	3571	J 8	6501	I 4		
2609	F12	3573	K 9	6502	J 2		
2610	I11	3574	J 7	6503	J 3		
2611	H10	3575	J 7	6504	J 2		
2620	J18	3576	K 8	6505	I 3		
2621	J18	3577	J 8	6506	J 3		
2622	I18	3578	K 5	6507	I 6		
2623	K17	3579	K 8	6508	I 6		
2624	K17	3580	J 5	6510	I 9		
2630	G14	3581	J 5	6511	I 9		
2631	G15	3582	K 8	6512	J 6		
2632	I16	3583	J 5	6513	J 7		
2633	I16	3584	J 6	6514	J 7		
2634	F16	3585	J 7	6515	I 5		
2635	F16	3586	K 5	6516	I 5		
2636	F14	3587	K 5	6520	I18		
2637	F15	3588	J 7	6521	I 8		
2638	F15	3589	J 7	6522	I10		
2639	F15	3600	F 7	6523	I10		
2640	F15	3602	F11	6525	I18		
2641	F15	3603	F12	6526	I17		
2642	F15	3605	F10	6530	I15		
2643	F15	3606	F11	6531	I14		
2644	F14	3607	F11	6534	I13		
2645	F14	3609	I10	6535	I13		
2646	F15	3620	I17	6536	I15		
2647	F15	3621	I17	6537	I12		
2648	F15	3622	H17	6538	I12		
2649	F15	3623	H17	6540	I15		
2650	F15	3627	J17	6541	I15		
2651	F16	3628	J17	6542	I13		
2653	E17	3629	J17	6543	I14		
2654	F14	3630	J16	6544	I16		
2660	D12	3631	J16	6545	I16		
2661	D15	3632	J15	6546	I15		
2662	D11	3633	J15	6550	I 9		
2663	E15	3634	J15	6551	I 9		
2664	E12	3635	J15	6552	I 9		
2665	E15	3636	J15	6553	I 9		
2666	E14	3637	J15	6554	I11		
2667	D17	3638	E12	6555	I10		
2668	D14	3639	K14	6556	I10		
2670	E13	3640	K14	6557	I11		
2671	E16	3642	J16	6558	I11		
2672	C14	3645	H14	6559	I13		
2673	C16	3646	J16	6560	I13		
2674	C17	3647	I 7	6561	I12		
2675	E17	3650	H17	6562	I12		
2680	C17	3651	G15	6563	I13		
2682	K12	3652	D13	6564	I13		
2683	J13	3652	G17	6565	I13		
2684	I13	3653	H17	6566	I13		
2685	I11	3654	F12	6567	I12		
2690	D10	3656	F13	6568	I12		
2691	C11	3657	G15	6580	I 8		
2692	D10	3658	D14	6581	I 9		
2703	C 9	3659	E12	6582	I 9		
2704	A12	3660	E15	6583	I 9		
2705	B 8	3662	D15	6584	I 9		
2706	C 8	3663	D12	6585	I 9		
2707	B 8	3664	D15	6586	I 9		

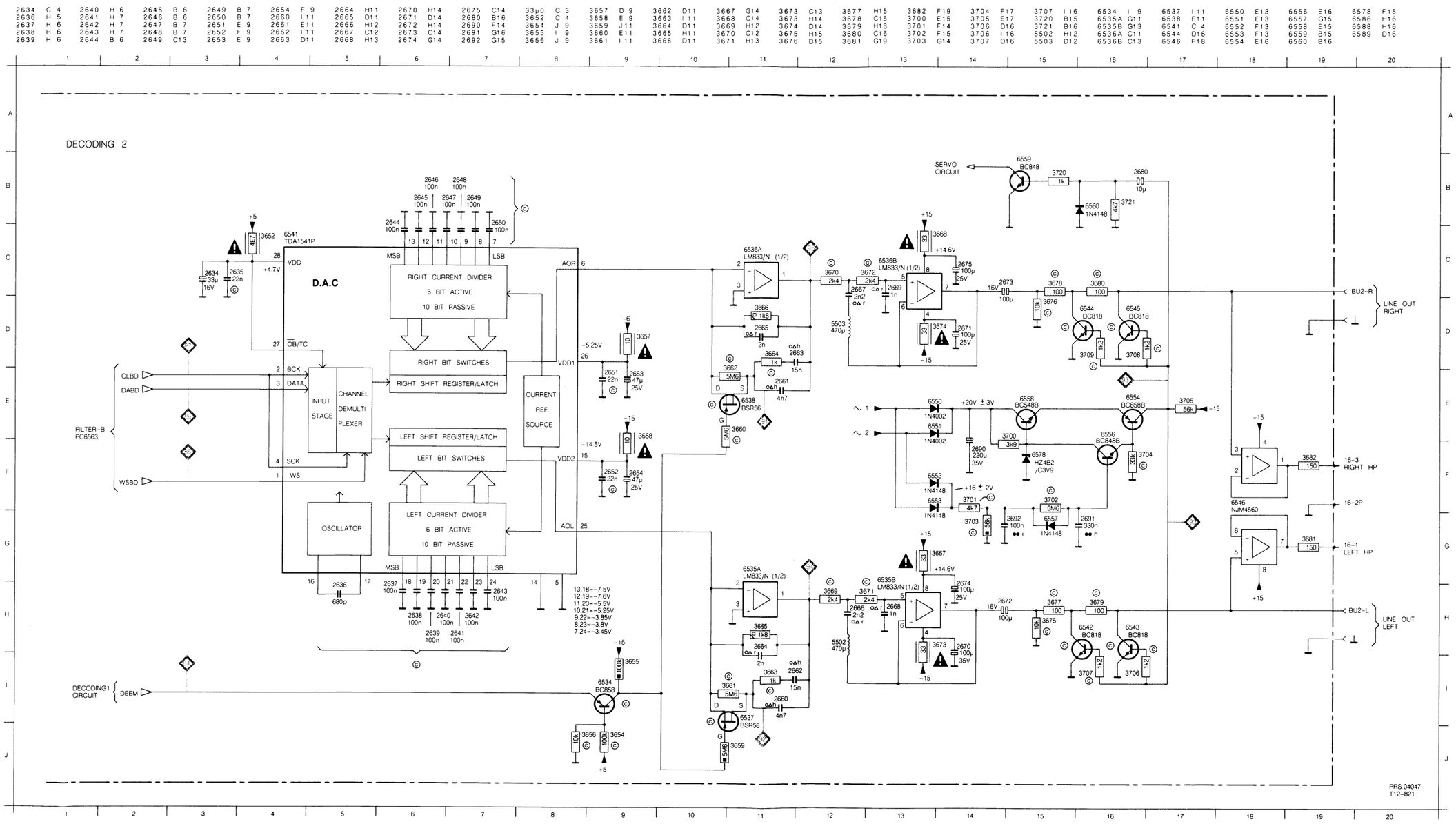
DECODING 1

1502 N14 2602 G 3 2609 M 3 2611 N 9 2632 N19 2683 B17 3600 F 2 3605 H 3 3609 M10 3632 B11 3635 B 6 3638 A12 3642 E 8 3651 M14 3687 B19 3690 C20 3693 B18 6520 H 3 6523 N 6 6540 G12 6563 B19 6566 C20 SK-2 B13
2600 F 2 2604 J 3 2609 M 4 2630 N14 2633 N18 2684 B17 3602 F 3 3606 H 2 3630 A11 3633 B11 3636 B 6 3639 B 9 3645 E16 3653 K20 3688 D18 3691 D20 3807 E 9 6521 G 2 6530 B 3 6561 C18 6564 B20 6567 C17
2601 F 2 2607 M 2 2610 N10 2631 N15 2682 E17 2685 B18 3603 J 3 3607 I 2 3631 B11 3634 A 6 3637 B 6 3640 A 9 3650 N18 3684 C18 3689 D18 3692 D17 5501 L 2 6522 E 3 6531 F17 6562 C18 6565 D19 6568 C17



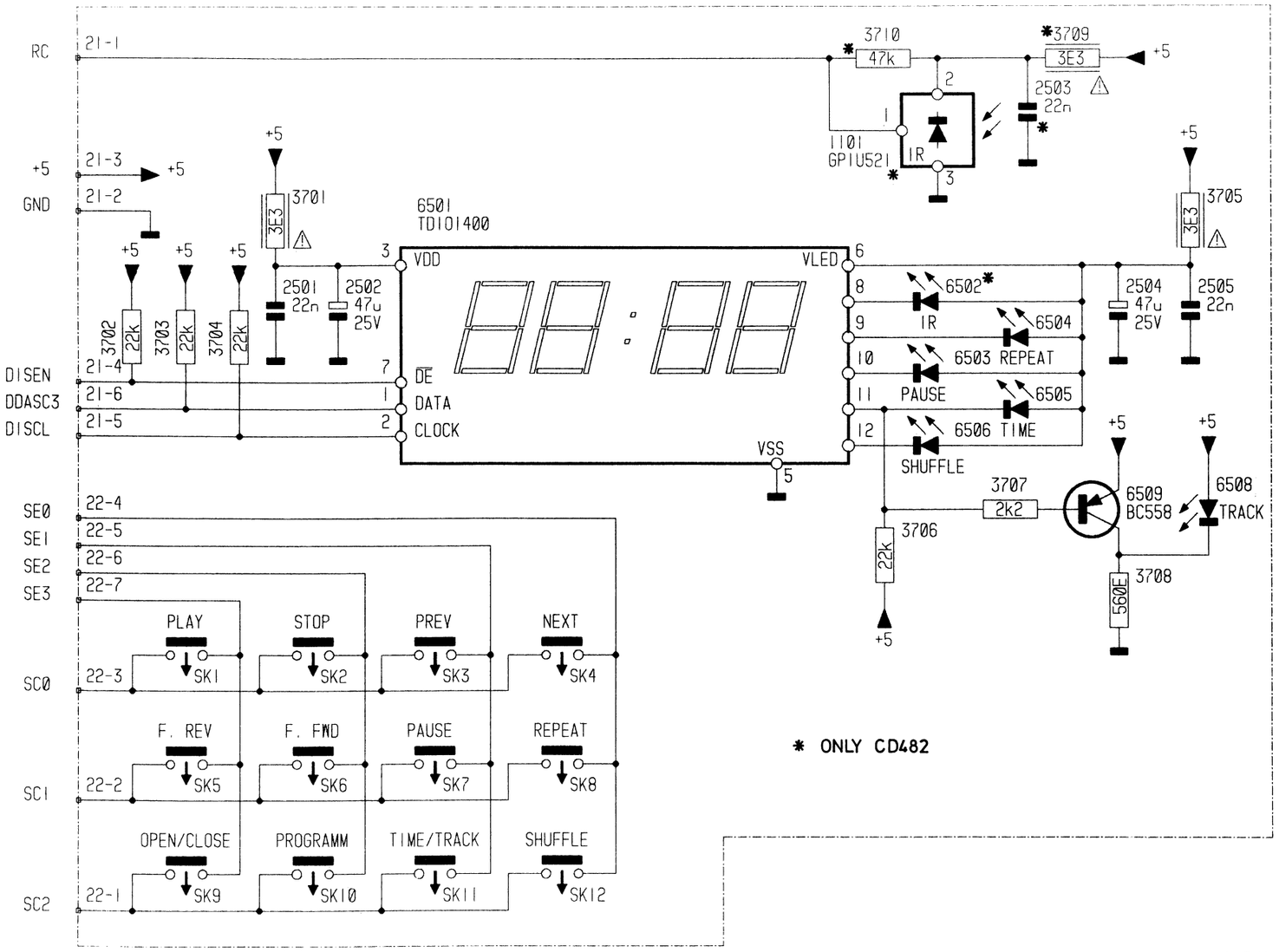
CS 16 356

DECODING 2



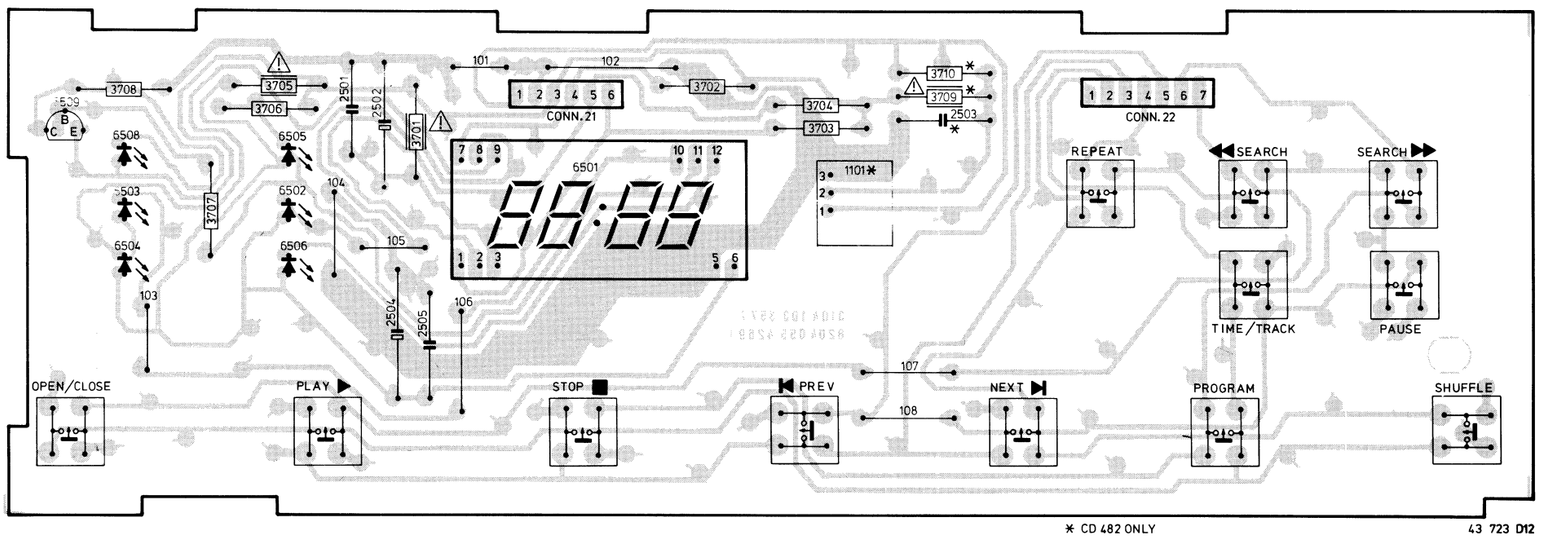
CS 16 357

CONTROL & DISPLAY CIRCUIT



43 722 B12

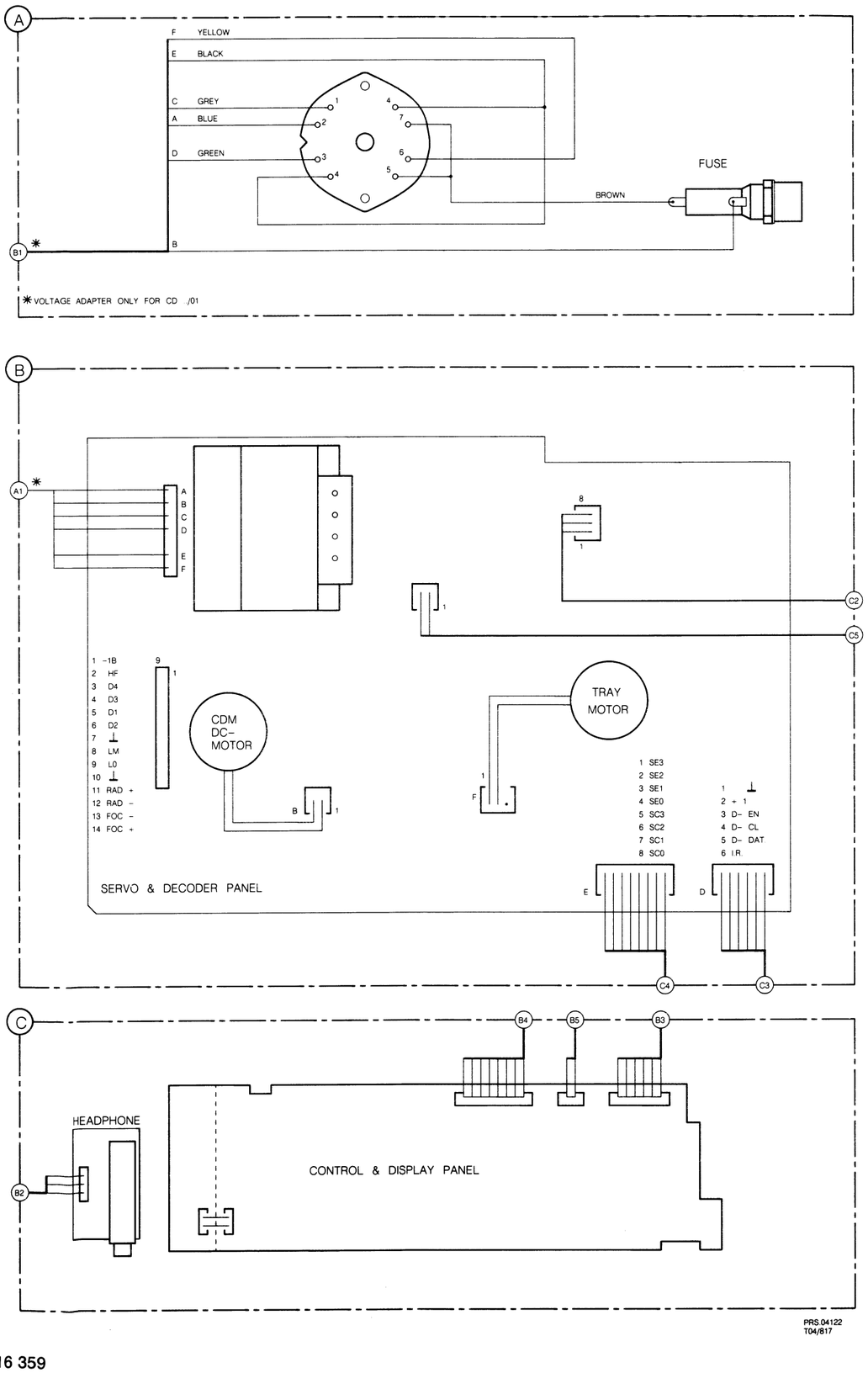
CONTROL & DISPLAY PANEL



CONTROL & DISPLAY PARTS

RES. Safety 3E3	4822 111 30593
LED Display 6501	4822 130 90552
LED orange	4822 130 80898
LED Holder	4822 255 40817
Transistor BC558	8422 130 40941
TACT Switch	4822 276 11896
I.R. Receiver	4822 214 51723

WIRING DIAGRAM



CS 16 359

ELECTRICAL PARTSLIST SERVO + DECODER PANEL

For non active chip components see separate list.

MC79L09AC	4822 209 73233
MC79M15CT	5322 209 86361
MC7906CT	4822 209 82056
TY40408 (+5V)	4822 209 71579
MC78M15	4822 209 80808
TDA8808T	4822 209 73234
TDA8809T/C2	4822 209 73235
SAA7210P/04	4822 209 71001
µPD41416C-20	4822 209 50582
SAA7220	4822 209 11157
TDA1541A/N2	4822 209 72544
TDA1543	4822 209 73236
LM833N	4822 209 83163
NJM4560D	4822 209 83274
TCA0372DP2	4822 209 72587
MC68HC05C8	4822 209 73232

BC328-16	4822 130 41023
BC328	4822 130 44104
BC338	4822 130 44121
BC558B	4822 130 44197
BC858	5322 130 42012
BC848	5322 130 41981
BC818	4822 130 42675
BF550	4822 130 42131

Miscellaneous

Display	4822 130 90543
Cinch socket	4822 267 40766
Tackt switch (tray)	4822 276 11896
Mains switch	4822 276 11309
Mains inlet	4822 265 20291
Phone socket	4822 267 30743
Fuse holder	4822 256 30274
Mains transformer	4822 146 30701

330N		5322 121 42661
4.7M	50V	4822 124 41577
6M8	50V	4822 124 41578
33M	16V	4822 124 40272
47M	25V	4822 124 41527
100M	25V	4822 124 41528
220M	16V	4822 124 40196
220M	35V	4822 124 41572
470M	35V	4822 124 41573
1000M	16V	4822 124 41571
6800M	16V	4822 124 41571

Bipolair

0.68M	16V	4822 124 41583
10M	25V	4822 124 41558
100M	16V	4822 124 22339

1N4002	4822 130 30684
1N4148	4822 130 30621
HZ7C2/7V2	4822 130 32862
BA314	4822 130 30879
HZ3B2	4822 130 32831
HZ7A3	4822 130 33523
BAT85	4822 130 31983

CSA4.000	4822 242 70831
11289.6 kHz	4822 242 71644

Coil 4.7 mH	4822 157 71644

Safety resistors	1/3 Watt
4E7	4822 116 52858
12E	4822 111 30511
18E	4822 111 31515
100E	4822 116 52389
120E	4822 116 52394
220R	4822 116 43221
330E	4822 116 52416
750R	4822 116 52432
1K	4822 116 52391
1K2	4822 116 52395
1K8	4822 116 53109
2K2	4822 116 52408
4K7	4822 116 52426
5K6	4822 116 52438
6K8	4822 116 52925
10K	4822 116 52452
22K	4822 116 52463
47K	4822 116 52472
100K	4822 116 52973
180K	4822 116 52505
5M6	4822 116 52533

Non flameable Resistors

1R	4822 111 30483
4R7	4822 111 30499
10R	4822 111 30508
33R	4822 111 30522
1K8	4822 116 53109

4K7	4822 101 10685
22K	4822 100 20522

ELECTRICAL PARTSLIST SERVO + DECODER PANEL (CONTINUED)
For non active chip components see separate stocklist

3302	4 E 7	5%	0,33 W	4822 111 30499
3305	4 E 7	5%	0,33 W	4822 111 30499
3306	4 E 7	5%	0,33 W	4822 111 30499
3336	4 E 7	5%	0,33 W	4822 111 30499
3360	4 E 7	5%	0,33 W	4822 111 30499
3369	1 R	5%	0,33 W	4822 111 30483
3372	4 E 7	5%	0,33 W	4822 111 30499
3374	4 E 7	5%	0,33 W	4822 111 30499
3381	4 E 7	5%	0,33 W	4822 111 30499
3383	4 E 7	5%	0,33 W	4822 111 30499
3384	4 E 7	5%	0,33 W	4822 111 30499
3385	4 E 7	5%	0,33 W	4822 111 30499
3388	4 E 7	5%	0,33 W	4822 111 30499
3389	4 E 7	5%	0,33 W	4822 111 30499
3390	4 E 7	5%	0,33 W	4822 111 30499
3396	1 R	5%	0,33 W	4822 111 30483
3404	10 M	5%	0,5 W	4822 116 52494
3418	22 E	5%	0,33 W	4822 111 30517
3419	22 E	5%	0,33 W	4822 111 30517
3421	47 E	5%	0,33 W	4822 111 30526
3422	11 K	1%	0,6 W	4822 116 52907
3424	150 E	1%	0,6 W	4822 116 52846
3425	47 E	5%	0,33 W	4822 111 30526
3426	11 K	1%	0,6 W	4822 116 52907
3428	150 E	1%	0,6 W	4822 116 52846
3429	47 E	5%	0,33 W	4822 111 30526
3430	11 K	1%	0,6 W	4822 116 52907
3432	150 E	1%	0,6 W	4822 116 52846
3433	47 E	5%	0,33 W	4822 111 30526
3434	11 K	1%	0,6 W	4822 116 52907
3436	150 E	1%	0,6 W	4822 116 52846
3446	4 E 7	5%	0,33 W	4822 111 30499
3447	10 E	5%	0,33 W	4822 111 30508
3448	4 E 7	5%	0,33 W	4822 111 30499
3454	820 E	1%	0,6 W	4822 116 52864
3455	820 E	1%	0,6 W	4822 116 52864
3458	33 E	5%	0,33 W	4822 111 30522
3459	33 E	5%	0,33 W	4822 111 30522
3460	2 K 4	1%	0,6 W	4822 116 52851
3461	2 K 4	1%	0,6 W	4822 116 52851
3462	2 K 4	1%	0,6 W	4822 116 52851
3463	2 K 4	1%	0,6 W	4822 116 52851
3464	33 E	5%	0,33 W	4822 111 30522
3465	33 E	5%	0,33 W	4822 111 30522
3466	620 E	5%	0,5 W	4822 116 52429
3467	4 E 7	5%	0,33 W	4822 111 30499
3476	620 E	5%	0,5 W	4822 116 52429
3477	4 E 7	5%	0,33 W	4822 111 30499
3482	330 R	1%	0,6 W	5322 116 53736
3483	270 E	1%	0,6 W	5322 116 53288

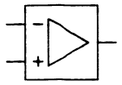
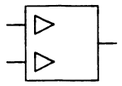
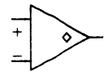
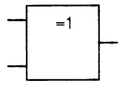
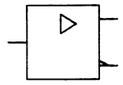
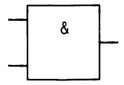
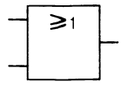
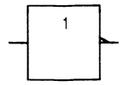
Miscellaneous

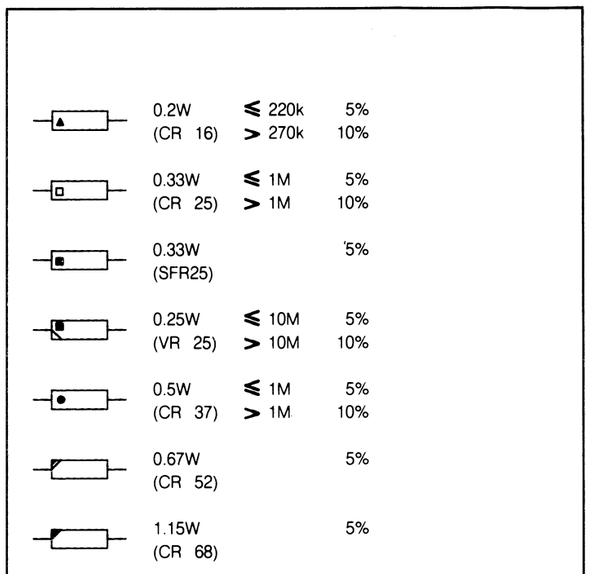
	Spring clip	4822 255 40179
5001	Mains transformer	4822 146 30701
BU 3	Phone socket	4822 267 30743
BU 2	Cinch socket 4p	4822 267 40766
BU 1	Mains inlet	4822 265 20291
SK1	Mains switch	4822 276 11309
SK2	Switch	4822 276 11896
	Holder fuse	4822 256 30274
1510	Fuse T160 mA	4822 253 30009
	Thermal fuse trafo 220/240 V	4822 252 20017
	Thermal fuse trafo 110/127 V	4822 252 20108

SYMBOL	DESCRIPTION
	Capacitor, general
	Electrolytic capacitor (+ and – may be omitted)
	Bipolar electrolytic capacitor (+ may be omitted)
	Resistor, general
	N.T.C. resistor
	P.T.C. resistor
	Voltage divider with preset adjustment
	Chip jumper
	Pin contact
	Bus contact
	Coil, self-induction
	Transformer with electrically poor conducting core and adjustable pre-magnetization
	Diode
	Zener diode
	Stabistor
	Double variable capacity diode (in one envelope)
	Photo conductive diode
	L.E.D.

SYMBOL	DESCRIPTION
	Transistor (N.P.N.)
	Transistor (P.N.P.)
	Direct current (DC)
	Alternating current (AC)
	Earth (functional)
	Frame or chassis connection
	Direction in which AC voltages are passed on (optional present)
	Interrupted line
	Not-connected crossing lines
	Connected lines
	Cable tree with lead-outs
	Changer, general (arrow is optional)
G VCO	Voltage Controlled Oscillator
	Band-pass filter
	Phase changing network
...ns	Delay element
	Amplifier, general

MDA.00083
T32-735

SYMBOL	DESCRIPTION
	Operational amplifier
	Differential amplifier
	Splitter
	Operational amplifier with open output
	Exclusive OR gate
	True/complement amplifier with high input
	Flip Flop
	AND gate
	OR gate
	Inverter with high input


0.2W (CR 16) ≤ 220k 5%
> 270k 10%
0.33W (CR 25) ≤ 1M 5%
> 1M 10%
0.33W (SFR25) 5%
0.25W (VR 25) ≤ 10M 5%
> 10M 10%
0.5W (CR 37) ≤ 1M 5%
> 1M 10%
0.67W (CR 52) 5%
1.15W (CR 68) 5%
Ceramic plate
Polyester flat foil
Polyester mepolesco
Mylar (Polyester flat foil small sized)
Micropoco
Tubular ceramic (body colour pink or yellow/green)
Miniature single elco
Subminiature tantalum
* a=2,5V b=4V c=6,3V d=10V e=16V f=25V g=40V h=63V i=100V j=125V l=125V m=150V n=160V q=200V r=250V s=300V t=350V u=400V v=500V w=630V x=1000V A=1.6V B=6V C=12V D=15V E=20V F=35V G=50V H=75V I=80V

MDA.00084
T32–735

© Chips 50 V NP0 S1206			© Chips 0,125 W S1206			© Chips 0,125 W S1206			1U
1 pF	5%	4822 122 32479	4,7 E	5%	5322 111 90376	6,8 k	2%	4822 111 90544	
1,2 pF	5%	4822 122 33013	5,1 E	5%	4822 111 90393	7,5 k	2%	4822 111 90276	
1,5 pF	5%	4822 122 31792	5,6 E	5%	4822 111 90394	8,2 k	2%	5322 111 90118	
1,8 pF	5%	4822 122 32087	6,2 E	5%	4822 111 90395	9,1 k	2%	4822 111 90373	
2,2 pF	5%	4822 122 32425	6,8 E	5%	4822 111 90254	10 k	2%	4822 111 90249	
3,3 pF	5%	4822 122 32079	7,5 E	5%	4822 111 90396	11 k	2%	4822 111 90337	
3,9 pF	5%	4822 122 32081	8,2 E	5%	4822 111 90397	12 k	2%	4822 111 90253	
4,7 pF	5%	4822 122 32082	9,1 E	5%	4822 111 90398	13 k	2%	4822 111 90509	
5,6 pF	5%	4822 122 32506	10 E	2%	5322 111 90095	15 k	2%	4822 111 90196	
6,8 pF	5%	4822 122 32507	11 E	2%	4822 111 90338	16 k	2%	4822 111 90346	
8,2 pF	5%	4822 122 32083	12 E	2%	4822 111 90341	18 k	2%	4822 111 90238	
10 pF	5%	4822 122 31971	13 E	2%	4822 111 90343	20 k	2%	4822 111 90349	
12 pF	5%	4822 122 32139	15 E	2%	4822 111 90344	22 k	2%	4822 111 90251	
15 pF	5%	4822 122 32504	16 E	2%	4822 111 90347	24 k	2%	4822 111 90512	
18 pF	5%	4822 122 31769	18 E	2%	5322 111 90139	27 k	2%	4822 111 90542	
22 pF	10%	4822 122 31837	20 E	2%	4822 111 90352	30 k	2%	4822 111 90216	
27 pF	5%	4822 122 31966	22 E	2%	4822 111 90186	33 k	2%	5322 111 90267	
33 pF	5%	4822 122 31756	24 E	2%	4822 111 90355	36 k	2%	4822 111 90514	
39 pF	5%	4822 122 31972	27 E	2%	5322 111 90105	39 k	2%	5322 111 90108	
47 pF	5%	4822 122 31772	30 E	2%	4822 111 90356	43 k	2%	4822 111 90363	
56 pF	5%	4822 122 31774	33 E	2%	4822 111 90357	47 k	2%	4822 111 90543	
68 pF	5%	4822 122 31961	36 E	2%	4822 111 90359	51 k	2%	5322 111 90274	
82 pF	10%	4822 122 31839	39 E	2%	4822 111 90361	56 k	2%	4822 111 90573	
100 pF	5%	4822 122 31765	43 E	2%	5322 116 90125	62 k	2%	5322 111 90275	
120 pF	5%	4822 122 31766	47 E	2%	4822 111 90217	68 k	2%	4822 111 90202	
150 pF	5%	4822 122 31767	51 E	2%	4822 111 90365	75 k	2%	4822 111 90574	
180 pF	2%	4822 122 31794	56 E	2%	4822 111 90239	82 k	2%	4822 111 90575	
220 pF	5%	4822 122 31965	62 E	2%	4822 111 90367	91 k	2%	5322 111 90277	
270 pF	5%	4822 122 32142	68 E	2%	4822 111 90203	100 k	2%	4822 111 90214	
330 pF	10%	4822 122 31642	75 E	2%	4822 111 90371	110 k	2%	5322 111 90269	
390 pF	5%	4822 122 31771	82 E	2%	4822 111 90124	120 k	2%	4822 111 90568	
470 pF	5%	4822 122 31727	91 E	2%	4822 111 90375	130 k	2%	4822 111 90511	
560 pF	5%	4822 122 31773	100 E	2%	5322 111 90091	150 k	2%	5322 111 90099	
680 pF	5%	4822 122 31775	110 E	2%	4822 111 90335	160 k	2%	5322 111 90264	
820 pF	5%	4822 122 31974	120 E	2%	4822 111 90339	180 k	2%	4822 111 90565	
1 nF	10%	5322 122 31647	130 E	2%	4822 111 90164	200 k	2%	4822 111 90351	
1,2 nF	5%	4822 122 31807	150 E	2%	5322 111 90098	220 k	2%	4822 111 90197	
1,5 nF	10%	4822 122 31781	160 E	2%	4822 111 90345	240 k	2%	4822 111 90215	
1,8 nF	10%	4822 122 32153	180 E	2%	5322 111 90242	270 k	2%	4822 111 90302	
2,2 nF	10%	4822 122 31644	200 E	2%	4822 111 90348	300 k	2%	5322 111 90266	
2,7 nF	10%	4822 122 31783	220 E	2%	4822 111 90178	330 k	2%	4822 111 90513	
3,3 nF	10%	4822 122 31969	240 E	2%	4822 111 90353	360 k	2%	4822 111 90515	
3,9 nF	10%	4822 122 32566	270 E	2%	4822 111 90154	390 k	2%	4822 111 90182	
4,7 nF	10%	4822 122 31784	300 E	2%	4822 111 90156	430 k	2%	4822 111 90168	
5,6 nF	10%	4822 122 31916	330 E	2%	5322 111 90106	470 k	2%	4822 111 90161	
6,8 nF	10%	4822 122 31976	360 E	1%	4822 111 90288	510 k	2%	4822 111 90364	
10 nF	10%	4822 122 31728	360 E	2%	4822 111 90358	560 k	2%	4822 111 90169	
12 nF	10%	5322 122 31648	390 E	2%	5322 111 90138	620 k	2%	4822 111 90213	
15 nF	10%	4822 122 31782	430 E	2%	4822 111 90362	680 k	2%	4822 111 90358	
18 nF	10%	4822 122 31759	470 E	2%	5322 111 90109	750 k	2%	4822 111 90359	
22 nF	10%	4822 122 31797	510 E	2%	4822 111 90245	820 k	2%	4822 111 90205	
27 nF	10%	4822 122 32541	560 E	2%	5322 111 90113	910 k	2%	4822 111 90374	
33 nF	10%	4822 122 31981	620 E	2%	4822 111 90366	1 M	2%	4822 111 90252	
47 nF	10%	4822 122 32542	680 E	2%	4822 111 90162	1,1 M	5%	4822 111 90408	
56 nF	10%	4822 122 32183	750 E	2%	5322 111 90306	1,2 M	5%	4822 111 90409	
100 nF	10%	4822 122 31947	820 E	2%	4822 111 90171	1,3 M	5%	4822 111 90411	
180 nF	10%	4822 122 32915	910 E	2%	4822 111 90372	1,5 M	5%	4822 111 90412	
220 nF	20%	4822 122 32715	1 k	2%	5322 111 90092	1,6 M	5%	4822 111 90413	
			1,1 k	2%	4822 111 90336	1,8 M	5%	4822 111 90414	
© Chips 0,125 W S1206 NP0			1,2 k	2%	5322 111 90096	2 M	5%	4822 111 90415	
			1,3 k	2%	4822 111 90244	2,2 M	5%	4822 111 90135	
0 E	jumper	4822 111 90163	1,5 k	2%	4822 111 90151	2,4 M	5%	4822 111 90416	
1 E	5%	4822 111 90184	1,6 k	2%	5322 111 90265	2,7 M	5%	4822 111 90417	
1,1 E	5%	4822 111 90377	1,8 k	2%	5322 111 90101	3 M	5%	4822 111 90418	
1,2 E	5%	4822 111 90378	2 k	2%	4822 111 90165	3,3 M	5%	4822 111 90191	
1,3 E	5%	4822 111 90379	2,2 k	2%	4822 111 90248	3,6 M	5%	4822 111 90419	
1,5 E	5%	4822 111 90381	2,4 k	2%	4822 111 90289	3,9 M	5%	4822 111 90421	
1,6 E	5%	4822 111 90382	2,7 k	2%	4822 111 90569	4,3 M	5%	4822 111 90422	
1,8 E	5%	4822 111 90383	3 k	2%	4822 111 90198	4,7 M	5%	4822 111 90423	
2 E	5%	4822 111 90384	3,3 k	2%	4822 111 90157	5,1 M	5%	4822 111 90424	
2,2 E	5%	5322 111 90104	3,6 k	2%	5322 111 90107	5,6 M	5%	4822 111 90425	
2,4 E	5%	4822 111 90385	3,9 k	2%	4822 111 90571	6,2 M	5%	4822 111 90426	
2,7 E	5%	4822 111 90386	4,3 k	2%	4822 111 90167	6,8 M	5%	4822 111 90235	
3 E	5%	4822 111 90387	4,7 k	2%	5322 111 90111	7,5 M	5%	4822 111 90427	
3,3 E	5%	4822 111 90388	5,1 k	2%	5322 111 90268	8,2 M	5%	4822 111 90237	
3,6 E	5%	4822 111 90389	5,6 k	2%	4822 111 90572	9,1 M	5%	4822 111 90428	
3,9 E	5%	4822 111 90391	6,2 k	2%	4822 111 90545	10M	5%	5322 111 91141	
4,3 E	5%	4822 111 90392							